The University of Chicago

Computation Center

NEWSLETTER

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GENERAL NEWS

New Students Given PERSON-IDs At Registration

A PERSON-ID is required in order to use any of the Computation Center's mainframe computers. The PERSON-ID is a 4-character name by which our computers identify each person using our systems. Once a person receives a PERSON-ID, that will be the only PERSON-ID he or she uses for all computing done through the Computation Center. After the PERSON-ID is acquired, the person must be enrolled in a funded computer project before using any of the computers.

This fall every new student (except GSB students, who are receiving their PERSON-IDs through a different procedure) will find a packet containing a unique PERSON-ID with his or her registration materials. Having a PERSON-ID will greatly simplify procedures, should the student decide to open a Personal Computing Account or enroll in a class that requires use of the computers.

Returning students who do not yet have PERSON-IDs are urged to obtain one (of their choice) from the Business Office at USITE (310 Wieboldt Hall). Returning students who register for a course in which computer use is required will be issued a PERSON-ID as part of the course registration procedure, if they haven't one already.

Short Notes

TAR Program Available on Chip: TAR (Tape Archive) is a program that runs on the TOPS-20 operating system. Its function is to allow the transfer of files from the TOPS-20 operating system to the Unix operating system easily. Capabilities include writing TOPS-20 files to tape, reading files from tape, and typing the contents of the tape. TAR is not designed to be used as a tape archiver on the TOPS-20 system. For this purpose, use DUMP-ER instead. TAR is available on Chip and is documented in MANUALS:TAR.DOC on Chip and in the latest version of *Magnetic Tape Usage*, (R114).

Rate Changes for Programmer/Analyst Services: Effective October 1, 1984, there will be a general increase in the hourly and monthly charges for programmer and analyst services by the Computation Center. The new rates were not yet available as this issue of the *NEWSLETTER* went to press; they will be announced in the November 1 issue. The major users of such services will all be contacted directly as soon as the new figures are available. Memos 4168, 4169, and 4170 (Rates for Center Services) will be updated to reflect the new rates; availability of these memos will be announced through the system messages on both IBM and DEC computers.

DS2: Now Available: A new public structure, DS2:, is now available on Dale. As with DS1:, all non-class accounts have an allocation of 10,000 pages.

Next NEWSLETTER November 1: The next Computation Center *NEWSLETTER* will be published on November 1 and we will return to our regular schedule of publishing a *NEWSLETTER* on the first of each month.

New Directions Investigated By Center Project Staff

Explosive change seems to be a continuing characteristic of the computer industry. As part of its mission to provide computing services to the University community, the Computation Center has over the years mounted numerous special efforts to investigate promising areas of new and improving technologies, and to identify new or enhanced services which could be offered to our users.

There are currently a number of active projects within the Computation Center engaged in such investigations. Some, such as the text project, have been active for years; others, such as network development, are brand new. Staff involvement in these projects ranges from a single person in one Computation Center group to four or five people from several different groups.

In each case the responsibility of the project team is to identify appropriate directions and potential services, and to perform or coordinate all the groundwork, preparation, testing, documentation, and installation required to turn ideas into capabilities. Users interested in making suggestions or discussing current developments can call the person identified in the appropriate project description below.

Once new services are made available to Comp Center users, responsibility for answering questions concerning their use and helping users with problems is usually turned over to the Program Advisors at the Advice Desk (962-7624). The project staff then serves only as backup in case of particularly difficult problems.

The following list is intended to highlight a few current developments within each of several selected projects:

Text Processing:
Donald Goldhamer (962-7166)
Charles Hodge (962-6081)--
Xerox 9700 Custom Printing

A major goal of this project is to simplify moving text from one step of processing to the next--entry, editing, formatting, and printing. Printing of multi-font documents on either the Xerox 9700 or 2700 printers will become easier as existing facilities are interfaced in better and friendlier ways. New pre-defined formats using the XICS formatter (a software product from XEROX) will bring new printer capabilities. In time, these will include the integration of text and graphics. Customized printing assistance is also available.

Graphics:
Dorothy Raden (962-7453)

The goal of the graphics project is to provide software and hardware support for a wide range of applications. Currently the major effort is in interfacing user databases, reports, and programs into easy-to-use graphics systems. Data or tables produced from existing user systems will be capable of being represented graphically on the TELL-A-GRAF graphics system on both the IBM 3081 and the two DEC-20s. Also in planning is the support of processing both raw and vector data on centralized high quality devices from distributed sites requiring a higher quality or alternative type of graphics device. An ongoing effort is the provision of graphics driver software support through existing systems for specific user micros and terminals.

Network Development:
Rich Alderson (962-7610)--Mailnet
Todd Nugent (962-7608)--Ethernet
Ron Rusnak (962-7607)--Bitnet

Local network development and improvement of inter-campus mail facilities is underway. The connection of several computers on campus via Ethernet cable is being planned. University participation in Mailnet and Bitnet has begun.

Database Applications:
Clark Wilson (962-8871)

System 1022 and the DEMAND-92 interface have been providing friendly Database Management System (DBMS) facilities on the DECs for years. More recently, a number of administrative applications have been developed on the IBM 3081 using the powerful capabilities of Model 204, a DBMS designed to support many users simultaneously updating and querying large databases. Model 204 can be made available to other users on a case-by-case basis. The Computation Center is continuing to explore ways of making DBMS tools available to more IBM users.

Microcomputing:
Dorothy Raden (962-7453)
AUC agreement (962-7151)
discounts & purchase
assistance (962-3452)

The aim of this project is to provide a broad range of microcomputing services that are best offered by a centralized facility. The areas currently supported by the Center are microcomputing seminars, purchase assistance, discounts, and the Apple University Consortium Agreement (AUC). Also supported is micro/mainframe communication consultation for IBM, Apple, and other such prominent micro systems, and the installation, distribution and main-

tenance of KERMIT, an error free file transfer program between the above mentioned micros and our mainframe computers.

Facilities available to the university community are a Demonstration and Development Laboratory and a Microcomputer Distribution Center for purchase of hardware and software available through the Apple University Consortium Agreement.

Data Resources:
Melissa Trevvett (962-6092)

The computer explosion has brought with it a growing wealth of machine-readable information, data files and sources, both on-campus and off. The Computation Center can work together with both providers and users of data to catalog the existence and availability of data files, develop improved methods of access to the data, and provide assistance in making existing data more readily usable by others, both within the University and outside it, as appropriate. Some of the available data collections are: social science data files from the Inter-university Consortium for Political and Social Research (ICPSR), census data, General Social Surveys from NORC, and textual data such as the American and French Research on the Treasury of the French Language (ARTFL) database.

Organization Of The University Of Chicago Computation Center

The Computation Center's administration was reorganized in April 1984. While some of the details of that reorganization have already been published in the *NEWSLETTER* , a more comprehensive overview and explanation are provided here and in the accompanying organization chart.

The Computation Center as a whole is headed by its Director. Each of the four main divisions is headed by an Associate or Assistant Director of the Computation Center. Functional units within the divisions are generally headed by group managers; the outline below includes a description of the primary functions of each such unit. For people to contact on some of the special areas described below, see the preceding article entitled *New Directions Investigated By Center Project Staff.*

Director of the Computation Center: Carolyn D. Autrey-Hunley (962-7690)

   Assistant to the Director: Peter Hayward (962-8671)

   Business Services
      Manager: Allan Addleman (962-7161)

      Handles the Center's financial, accounting, and personnel matters.

I - Associate Director for Operations and Technical Services: John E. Iannantuoni (962-7616)

   A - Facilities and Hardware Planning
      Manager: Michael Willey (962-7617)

      Monitors hardware performance and coordinates maintenance. Also plans for and coordinates new hardware acquisitions and installation.

   B - Operating Systems
      Manager: (vacant)

      Installs, modifies, and maintains software for the IBM 3081D, the DEC-20s, the Pyramid, and the Xerox 9700 printers. This includes operating systems, terminal systems, major programming languages, system utilities, and some major database systems. This group also evaluates system performance and recommends hardware and software modifications and replacements.

   C - Communications Services
      Manager: Robert Vonderohe (962-7658)

      Responsible for the complex communications network linking the Center's computers to campus facilities and the outside world, including the Library's computer network. Also repairs

components, micro-computers, and terminal equipment. This group will play a major role in the planning, design, and physical implementation of the Ethernet pilot project to connect campus computers via high-speed data links.

D - Operating Services
Manager: Richard Gierat (962-7601)

Provides data entry and keypunch services. Call Helen Rankin, Data Entry Manager, at 962-7604 for information.

Provides job scheduling and expediting services for production systems and other applications. Can set up and provide backup services for private disks. Call Laura Cuzzillo, Supervisor of Expediting Services, at 962-7602 for information.

Supervises the Machine Room. Contact J. C. Cooper at 962-7618.

Vendor contacts, computer supplies, environmental administration, and I/O administration are handled by John Stark, I/O Supervisor, at 962-7603.

II - Assistant Director for Information Technologies and New Services: George R. Bateman (962-7174)

Provides support and consultation for new and prospective users of both current and emerging technologies.

Gives advice regarding microcomputers, word processors, terminals and other services. Researches new products and services.

III - Assistant Director for Instruction and Research Information Services: Harold C. Bloom (962-7155)

A - Instruction and Documentation Services
Manager: Ernest Froemel (962-7452)

Oversees the Advice Desk and its procedures. Coordinates user documentation, memos, and manuals.

Oversees the Terminal Clusters. Call Ed Donner, Supervisor for the Terminal Clusters, at 962-8188, for information.

Coordinates the Center's educational activities, including courses, seminars, and DELTAK. Call Don Crabb, Educational Coordinator, at 962-7173 for information.

B - Applications Systems
Manager: (vacant)

Maintains, updates, and provides consultation on most installed applications software and packages on all of the Center's mainframe systems and its laser printers.

Provides help for users who do their own computing on the Center's machines including, for a fee, custom programming.

Maintains information on datafiles available on campus or at other installations; assists researchers in making datafiles available to campus or external users.

Reviews and makes recommendations on user requests for new software or datafiles.

IV - Assistant Director for Administrative Information Services: David E. Trevvett (962-6018)

A - Information Systems
Manager: James Krema (962-8502)

Provides custom analysis and programming for both large and small systems, primarily for users of the Center's mainframe computers, with special emphasis on support of administrative functions of the University.

Provides general technical support and advice for current and potential users of the Model 204 Database Management System.

B - Library Computer Systems
Manager: Gerald Clark (962-8762)

Supports the Library's major computer systems and databases, including the automated circulation system, bibliographic system, and acquisitions, as well as new developments in such areas as online catalog and serials control.

Organization of the University of Chicago Computation Center

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                          │  Computation     │
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Director Of the Computation Center

Associate Director Operations & Technical Services

Assistant Director Information Technologies & New Services

Assistant To the Director

Assistant Director Instruction & Research Info Services

Assistant Director Administrative Information Services

Manager Facilities & Hardware Planning

Manager Operating Systems

Manager Communica-tion Services

Manager Operating Services

Manager Business Services

Information Technologies & New Svcs

Manager Instruction & Documenta-tion Services

Manager Applications Systems

Manager Information Systems

Manager Library Computer Systems

New PCA Policy Now In Effect

Personal Computing Accounts are available to faculty, registered students, and University Hospital interns and residents. These accounts may be used for computing on any of the Computation Center's computers, and are valid for a period of one year from the date they are opened. These accounts may be opened by going to the Center's Business Office at USITE (9:00 - 4:00), presenting a valid University ID card, and filling out an application form.

The following funding procedures have been implemented for the Fiscal Year ending June 30, 1985:

1. Accounts for students and University Hospital interns and residents will be funded at a level of $200.

2. Accounts for faculty will be funded at a level of $400.

3. Any PCA holder who pays $100 (cash or check) for additional computing will receive an additional $200 of further computing after the $100 has been spent. This option may be exercised only once during the year that the PCA is valid.

The $100 must be paid at one time and the money must come from personal funds; it may not be billed to a University account. The amount paid must be $100 - no partial payment is allowed.

If at the time the PCA expires or the holder leaves the University some of the $100 paid has not been spent, the PCA holder may request that the remaining balance of the $100 be refunded. No such refund will be made once the $100 has been spent and the account has begun using the additional $200 (i.e., none of the additional $200 is refundable to the PCA holder).

While PCA accounts can be used on any of the Center's mainframes, only machine related charges (such as cpu time, connect time or page printing) may be charged against them. They may not be used for non-machine charges (such as purchase of tapes or custom programming).

If a PCA account runs out of funds, expires, or if a student holding the account is no longer registered at the University, the files associated with that account will be backed up to tape and then deleted from the system, and the account will be locked. If the account is locked because the student is no longer registered, it can be unlocked if the student registers again within the original twelve month period. DEC-20 users should note that it is possible to run out of funds on that system while there are still funds remaining on other Center computers - if the user does not transfer additional funds to the DEC-20, that account will be considered out of money and the backup and deletion procedure will be followed. There is a charge of $15 to have the files restored.

Shoreland Micro Laboratory

Students returning to the Shoreland residence hall this autumn quarter will notice an important new addition to their facilities. A laboratory containing personal computers has been established there. The lab, located on the 2nd floor, contains six Apple Macintosh computers, five Zenith 150 computers (IBM PC compatible machines), supporting printers, communications connections, and software. Students of the Shoreland are entitled to use the lab during its open hours for a nominal access fee. The Shoreland Council will decide whether and under what conditions other students will have access to the Micro Laboratory. According to present plans, each Shoreland student will be allowed a certain amount of free time on the computers to explore the uses of the machines. This laboratory will be entirely staffed and operated by students and it is hoped that it will pay for itself through a fair pricing scheme for access to the micros.

Training in how to use the machines will be provided by the lab supervisor and attendants who will assist students when the lab is open. Richard Taub, associate dean of The College, and chairman of the committee organizing the laboratory, believes that "this microcomputer laboratory will allow students the opportunity to use microcomputers for a variety of tasks, from financial aid planning to writing term papers, without the larger expense of purchasing a micro themselves." Dean Taub encourages those students to take advantage of the PC lab.

The Computation Center has provided technical planning and training assistance to this project. Several of the micros available in the laboratory are equipped to communicate with other computers, including the mainframe machines supported by the Center (i.e., the IBM 3081D, the DECsystem-20s, and the Pyramid/UNIX system). The communication connection is an important one for students who can then take advantage of programs, research data, laser printing, and large amounts of computer storage space available to them on the Center's computers, while allowing them to use and manipulate these resources locally on the micros.

The student manager of the Lab is Peter Hendrickson, who lives in the Shoreland.

Ethernet Cable to Connect Campus Mainframes

For the past several months, a committee with representatives from each of several areas with strong interests in creating a computer communications network has been evaluating a coordinated Ethernet communication capability. Initially, the network would include various computer mainframes, with potential access by users on terminals or microcomputers. Astronomy, Biological Sciences, Chemistry, Computer Science, Mathematics, The Graduate School of Business, and the Computation

Center are the departments involved at this time. The mainframes included in the considerations are located about the central campus area.

In the preliminary evaluation, it was decided to use fiber optic cable for the interbuilding portions of the Ethernet so as to isolate the sites electrically, thereby avoiding problems with power surges caused by thunderstorms. The fiber optic portion would then interface to conventional coax segments in the buildings. The actual interfaces, called gateways, would have intelligence in order to isolate local transmissions on the coax segments from the optical portion.

Following approval of the recommended topography, purchase and installation contracts have been placed to install fiber cable between the following building sites: Cummings Life Sciences, Eckhart, Jones, Research Institutes, Searle, and Walker. The fiber cable will have spare capacity, while providing 10 MHZ transmission for Ethernet between the above sites.

Preliminary communication should be possible on the new fiber optic medium sometime late in the fall quarter.

Computation Center Classes For Autumn Quarter, 1984

The Computation Center is once again offering a variety of short, non-credit courses and seminars which are open to the general University community. A schedule of the classes available for autumn quarter follows. For a complete description of these classes please consult the *Computation Center Seminar and Course Curriculum Guide for 1984-1985*. The *Curriculum Guide* also gives you recommended class sequences to take for different subject areas and lets you plan the Center's classes you want to take during the year. PLEASE

NOTE THAT NOT ALL CLASSES ARE OFFERED EACH QUARTER AND YOU MUST CONSULT THE GUIDE TO PLAN YOUR CLASSES ACCORDINGLY. Each seminar and course has an identification number associated with it in order to simplify course selection and registration. Each seminar and course also may have prerequisite classes listed for it. The prerequisite classes, or equivalent knowledge of the material that they cover, are essential to understanding the topics covered in the classes dependent on them. Class instructors work from the assumption that you have attended the appropriate prerequisite classes or already understand the subjects discussed in those classes. To make effective use of the classes that the Center provides you should take classes in the sequences suggested in the Curriculum Guide.

In addition to the quarterly seminars and courses taught in a classroom setting, the Center also provides videotaped training sessions. More information on video computer classes can be found in the Curriculum Guide.

Registration is required for all courses. Many seminars also require registration. Although seminars are free of charge, there is a fee for many courses. It may be paid in cash, charged to a Computation Center billable project (Student and Faculty Personal Computing Accounts, PCAs, are not billable projects), or paid with a University 62 form. A refund will be made if the registrant requests one before the start of the second session of the course in question. All seminars and courses which fail to meet minimum enrollments listed are subject to cancellation. Registrants will be notified if a class is cancelled.

Those interested in registering for courses may do so in person at the Computation Center USITE Business Office, in Wieboldt 310, from 9:00 a.m. to 4:00 p.m., Monday through Friday. Seminar registration is handled differently; consult the class schedule listings below for information. Anyone wishing further information concerning the topics and content of these seminars and courses should examine the Computation Center Seminar and Course Curriculum Guide for 1984-1985 or contact the Center's Educational Coordinator, Don Crabb, at 962-7173 (or via DEC-20 MM to STAFF.DONCRABB).

Autumn Quarter 1984 Seminars

CC100 - INTRODUCTION TO COMPUTER CONCEPTS AND TERMINOLOGY
Location: Harper 406
Date and Time: Monday, October 15, 3:30-5:00
Prerequisites: None
Instructor: Don Crabb

CC110 - INTRODUCTION TO THE UNIVERSITY OF CHICAGO COMPUTATION CENTER FACILITIES AND SOFTWARE
Location: Harper 406
Date and Time: Tuesday, October 16, 1:00-2:30
Prerequisites: None
Instructor: Don Crabb

CC400 - OVERVIEW OF COMPUTER ASSISTED TEXT PROCESSING AT THE UNIVERSITY OF CHICAGO
Location: Harper 406
Date and Time: Wednesday, October 17, 3:30-5:00
Prerequisites: None
Instructor: Don Goldhamer

CC200 - INTRODUCTION TO SUPERWYLBUR
Please attend only one session:
Location: Harper 406
Dates and Times: Thursday, October 18, 1:00-2:30
Friday, October 26, 1:00-2:30
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Vivian Nix

CC130 - INTRODUCTION TO MAGNETIC TAPE STORAGE
Please attend only one session:
Location: Harper 406
Dates and Times: Friday, October 19, 3:30-5:00
Friday, November 2, 1:00-2:30
Prerequisites: CC100, CC110, CC200, CC210, or equivalent knowledge
Instructor: Judy Curry

CC700 - OVERVIEW OF DATABASE STRUC-TURES AND ARCHITECTURE
Location: Harper 406
Date and Time: Monday, October 22, 1:00-2:30
Prerequisites: CC100, or equivalent knowledge
Instructor: Don Goldhamer

CC210 - INTRODUCTION TO THE DEC-SYSTEM-20s (Two Parts)
Please attend only one session (each session is two parts):
Location: Harper 406
Dates and Times: Monday and Wednesday, October 22 and 24, 3:30-5:00
Tuesday and Thursday, October 30 and November 1, 4:00-5:30
Prerequisites: CC100, CC110, or equivalent knowledge
Instructors: Ernie Froemel or Chris Delmar

CC220 - INTRODUCTION TO THE PYRAMID/-UNIX SYSTEM (Two Parts)
Please attend only one session (each session is two parts):
Location: Harper 406
Dates and Times: Tuesday and Thursday, October 23 and 25, 1:00-2:30
Monday and Wednesday, November 12 and 14, 10:30-12:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Pete Davis

CC800 - INTRODUCTION TO COMPUTER PRO-GRAMMING (Two Parts)
Location: Harper 406
Date and Time: Tuesday and Thursday, October 23 and 25, 4:00-5:30
Prerequisites: CC100, CC120, or equivalent knowledge
Instructor: Don Crabb

CC230 - INTRODUCTION TO THE USE OF THE MVS OPERATING SYSTEM
Location: Harper 406
Date and Time: Friday, October 26, 3:30-5:00
Registration is required for this seminar. Register by calling Yvonne McNear at 962-7153.
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC100, or equivalent knowledge
Instructor: Don Goldhamer

CC410 - TEXT EDITING WITH SUPERWYLBUR
Location: Harper 406
Date and Time: Monday, October 29, 3:30-5:00
Prerequisites: CC100, CC110, CC400, or equivalent knowledge
Instructor: Ed Donner

CC430 - TEXT PROCESSING IN THE IBM ENVI-RONMENT (TREATISE, SCRIPT) (Two Parts)
Location: Harper 406
Dates and Times: Wednesday and Friday, October 31 and November 2, 3:30-5:00
Prerequisites: CC100, CC410, or equivalent knowledge
Instructor: Ed Donner

CC240 - OVERVIEW OF THE ACF2 DATASET SECURITY SYSTEM UNDER MVS
Location: Harper 406
Date and Time: Thursday, November 1, 1:00-2:30
Registration is required for this seminar. Register by calling Yvonne McNear at 962-7153.
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC230, or equivalent knowledge
Instructor: Ernie Froemel

CC300 - INTRODUCTION TO MICROCOMPUTING (Three Parts)
Location: Harper 406
Dates and Times: Monday, Wednesday, Friday, November 5, 7, 9, 3:30-5:00
Prerequisites: none
Instructors: Martha Ash and Don Crabb

CC440 - EMACS FULL SCREEN EDITING ON THE DECSYSTEM-20s AND PYRAMID/-UNIX
Location: Harper 406
Date and Time: Monday, November 5, 1:00-2:30
Prerequisites: CC210 and CC220, or equivalent knowledge
Instructor: Al Schultz

CC460 - INTRODUCTION TO MUSE WORD PROCESSING ON THE DECSYSTEM-20s (Three Parts)
Location: Harper 406
Dates and Times: Monday, Wednesday, Friday, November 5, 7, 9, 10:30-12:00
Prerequisites: CC210, or equivalent knowledge
Instructor: Arlene Brown

CC470 - TYPESETTING EMULATION WITH XSET
Location: Harper 406
Date and Time: Tuesday, November 6, 4:00-5:30
Prerequisites: CC200, CC400, CC410, or equivalent knowledge
Instructor: Joan McGrane

CC480 - USING THE GENERALIZED MARKUP LANGUAGE (GML) FOR TEXT FORMATTING IN THE IBM ENVIRONMENT
Location: Harper 406
Date and Time: Thursday, November 8, 4:00-5:30
Prerequisites: CC200, CC400, or equivalent knowledge
Instructor: Ed Donner

CC420 - INTRODUCTION TO THE EDIT LINE EDITOR AND THE RUNOFF TEXT FORMATTER ON THE DECSYSTEM-20s
Location: Harper 406
Date and Time: Tuesday, November 13, 4:00-5:30
Prerequisites: CC210, CC400 or equivalent knowledge
Instructor: Chuck Hodge

CC600 - INTRODUCTION TO TELL-A-GRAF AND THE DATA CONNECTION ON TSO AND ON THE DECSYSTEM-20s
Location: Harper 406
Date and Time: Tuesday and Thursday, November 13 and 15, 1:00-2:30
Prerequisites: CC200, CC210, or equivalent knowledge
Instructor: Dorothy Raden

CC310 - MICROCOMPUTER DATA COMMUNICATIONS
Location: Harper 406
Date and Time: Thursday, November 15, 3:30-5:00
Prerequisites: CC100, CC300, or equivalent knowledge
Instructors: Don Crabb and Martha Ash

CC610 - INTRODUCTION TO CUECHART ON THE DECSYSTEM-20s AND THE IBM 3081D (Workshop)
Location: Harper 406
Date and Time: Friday, November 16, 3:30-5:00
Prerequisites: CC210, CC600, or equivalent knowledge
Instructor: Joyce Weil

CC630 - INTRODUCTION TO SAS/GRAPH (Two Parts)
Location: Harper 406
Date and Time: Tuesday and Thursday, November 27 and 29, 1:00-2:30
Prerequisites: CC200 and CC530, or equivalent knowledge
Instructor: Jim Lichtenstein

Autumn Quarter 1984 Courses

CC810 - INTRODUCTION TO FORTRAN PRO-GRAMMING ON THE DECSYSTEM-20s (Eight Parts)
Registration is required for this course. Register at the USITE business office by October 26.
Mondays and Wednesdays, October 29 - November 21, 5:30-7:00
Location: Harper 406
Cost: $40.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC210, CC420, CC800, or equivalent knowledge
Instructor: Kay Sandacz

CC530 - INTRODUCTION TO SAS (Six Parts)
Registration is required for this course. Register at the USITE business office by October 26.
Tuesdays and Thursdays, October 30 - November 15, 6:00-7:30
Location: Harper 406
Cost: $30.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC200, or equivalent knowledge
Instructor: John Raz

Computation Center Video Classes Available At USITE

The Computation Center produces several kinds of videotaped computer classes which are available for use by the University community. These tapes cover a variety of computing topics, from introductory sessions to more advanced topics. Two kinds of taped classes can be viewed at USITE: videotaped versions of some of the live classes we teach each quarter and other sessions especially designed and produced for the video medium. All of these videotaped classes are described fully in our *1984-1985 Curriculum Guide*, copies of which are available at several locations (see the article *New Computation Center Curriculum Guide Will Be Available Soon* for more information).

The videotaped versions of live classes supplement our quarterly teaching schedule with video materials available on a 24 hour-a-day basis, so that if you miss the live seminar you don't have to wait another quarter until it's offered again. The designed videos cover topics in a more succinct manner, enabling you to learn how to do something with a computer quickly.

All of the videos, with supporting written handouts, are available, at no charge, for use at the Self-Instructional Facility in USITE. To use an available video, contact the USITE cluster attendant who will supply you with the tape and materials and open the facility for your use, in exchange for your University of Chicago ID. The attendant can also provide you with information on how to use the VCR to play the tapes. This library of tapes will be supplemented and modified as new tapes are produced. For more information about this program consult the *Curriculum Guide* or you may discuss the videos currently available or those to be produced in the future with the Center's Educational Coordinator, Don Crabb, at 962-7173 (or via DEC-20 MM to STAFF.DONCRABB).

Videotaped live classes currently available:

CC100 - COMPUTER CONCEPTS AND TERMIN-OLOGY
One Videotape (90 minutes)
Instructor: Don Crabb

CC110 - COMPUTATION CENTER FACILITIES AND SOFTWARE
One Videotape (90 minutes)
Instructor: Don Crabb

CC120 - FUNDAMENTALS OF COMPUTING
Three Videotapes (90 minutes each)
Instructor: Don Crabb

**CC300 - INTRODUCTION TO MICROCOMPUT-
ING AT THE UNIVERSITY OF CHICAGO**
Three Videotapes (90 minutes each)
Instructors: Martha Ash and Don Crabb

**CC400 - OVERVIEW OF TEXT PROCESSING AT
THE UNIVERSITY OF CHICAGO**
One Videotape (90 minutes)
Instructor: Don Goldhamer

**CC500 - INTRODUCTION TO NCPCALC ON
THE DECSYSTEM-20s**
One Videotape (60 minutes)
Instructor: Martha Ash

CC200 - INTRODUCTION TO SUPERWYLBUR
One Videotape (90 minutes)
Instructor: Vivian Nix

**CC210 - INTRODUCTION TO THE DEC-
SYSTEM-20s**
One Videotape (90 minutes)
Instructor: Ernie Froemel

**CC430 - TEXT PROCESSING IN THE IBM ENVI-
RONMENT (TREATISE, GML)**
Three Videotapes (90 minutes each)
Instructor: Ed Donner

Designed Video Sessions:

**CC110 - INTRODUCTION TO COMPUTING AT
USITE**
One Videotape (20 minutes)
Narrator: Don Crabb

**CC110 - INTRODUCTION TO TERMINALS AT
USITE**
One Videotape (15 minutes)
Narrator: Don Crabb

**CC450 - USING THE SED FULL SCREEN EDI-
TOR ON THE DECSYSTEM-20s**
One Videotape (30 minutes)
Instructor: Martha Ash
Narrator: Don Crabb

New Comp Center Curriculum Guide Will Be Available Soon

For the first time the Center is producing a complete guide describing all the classes, live and videotaped, that we provide to aid you in learning to use the computer services that we offer. This *Computation Center Seminar and Course Curriculum Guide 1984-1985* will be available free of charge at various locations on campus, including the Staff Office Building at 5737 South University Avenue (from 8:30 to 5:00, Monday - Friday), the Main Business Office at 1313 East 60th Street, room 164, (from 8:30 to 4:30, Monday - Friday), and at USITE, Wieboldt 310 (from the cluster attendant on a 24-hour-a-day basis, every day that USITE is open).

You should consult the *Curriculum Guide* before choosing which classes to attend and which videotapes to watch for the computer use that you have in mind. Schedules of the live classes described in the *Guide* are published each quarter and are available in the locations listed above.

Anyone wishing further information should contact the Center's Educational Coordinator, Don Crabb, at 962-7173 (or via DEC-20 MM to STAFF.DONCRABB).

Crerar Library Comp Center Terminal Cluster Open Soon

The science and technology collections of the University of Chicago Library are located in the new John Crerar Library at 57th Street and Ellis Avenue. The new building will have an unattended, 24-hour Computation Center terminal cluster, similar to the unattended Abbott cluster. There will be no printer at Crerar, and there will be no delivery of

output to Crerar. Users will be able to print and direct the output to OSBN, the open bins at Operations Site. They may then pick up their output at the site which is less than a block away. The new user site will provide six terminals, and is expected to alleviate overcrowding at the other clusters as experienced users switch to the new Crerar facility. The official opening of the Crerar terminal cluster will be announced via the system messages so users will be able to switch to the new site immediately.

File Protection Rings for Tapes

The Computation Center Production Services group now has a procedure for protecting data stored on tape from being accidentally over-written. File protection rings (no-write rings) are now available through the Tape Librarian. This device is inserted into the circular depression on the tape reel which normally holds the "write-allow ring." The file protection rings may be purchased for $.50 and can be inserted and removed only by the Tape Librarian. To insert or remove a file protection ring, the Tape Librarian must have a written request from a person with a valid MVS LOGON-ID who is enrolled in the project which rents or stores the tape. The written request can be either a memo or electronic mail.

Tours Of USITE

How to use the documentation, terminals and printers, and how to find your output will be among the topics covered in a 45 minute orientation to computing at USITE. The use of the new 132 character display Wyse terminals will also be included. The orientation is offered Monday, October 1 through Thursday, October 18 according to the following schedule:

Monday & Tuesday: 12 noon
Wednesday & Thursday: 4:30 p.m.

Meet at the Walt Whitman statue in USITE. Instructors can arrange orientations for their classes by contacting Ed Donner at 962-8188 or via DEC MM to STAFF.EDDONNER.

ORIENTATION

What Computer Should You Use?

All of a sudden, somebody told you that you have to use a computer. It could have been your supervisor, your instructor, or your advisor. It sounded simple at the time, but then you saw this *NEWS-LETTER* and read about DEC, and IBM, and Pyramid, and microcomputers. Which one is best for you?

In many cases, the choice is made for you. The instructor has set up classroom accounts on the DEC-2060; your supervisor has all the department's data on the IBM 3081D. In other cases, you need guidance in choosing the machine that will best meet your computing needs. This article is designed to provide part of that guidance.

Let's begin by looking at the different machines and their capabilities. Then, let's look at some typical computing needs and how they may be met.

The IBM 3081D

The IBM 3081D is a big machine that comes from the tradition of batch processing. That is, it works best when you submit a complete set of commands as a job, and it can schedule the execution of that job in relation to all other jobs. Once you submit your job, you have passed control to the computer and don't get control again until the computer is finished or you cancel the job.

This computer is considered to be big because it has large amounts of memory, disk, and tape storage available and it can run several large batch jobs at one time. The IBM 3081D is used heavily by applications which require the maintenance of massive data files, extensive computations, or a large memory.

The current operating system for the IBM 3081D is MVS. You would use either SUPERWYLBUR or TSO to create, submit, and examine jobs. SUPER-WYLBUR is, by far, the easier of the two to learn and use.

Since it is the biggest of the computers, the IBM 3081D is used to account for computer use by the Computation Center. As a result, anyone who uses any of the other computers, also needs an account on the IBM. If you desire, you may never directly use that IBM account, but all other computer use is accumulated under that account.

The Two DEC-20s

The DEC-20 is a medium-sized machine designed for interactive processing. That is, you issue a command, then the computer executes it and prompts for the next command. It's like having a conversation with the machine. The DEC-20 can converse with many people at the same time and make each feel as if he or she were the only one using the machine.

There are modest amounts of main storage and disk storage, and the two DECs share two tape drives. The DEC-20 was first acquired especially for instructional computing. It can handle moderately-sized mathematical and statistical analysis, database applications, and text processing. The machine is considered to be user-friendly. That is, it prompts you for commands, provides possible alternatives if you're not sure what to do next, and contains on-line files to help you learn about different programs. It is also fairly forgiving of beginner's mistakes.

The operating system for the DEC-20 is TOPS-20, through which you would access the machine. Once connected to the DEC-20, you could issue commands or call programs in order to get your work done.

There are two DEC-20s, one named Chip and the other called Dale. When you open a DEC-20 ac-

count, you have access to both of them. Of course, when you open a DEC-20 account, you also need a parallel IBM account in which to collect usage charges.

The Pyramid 90X

The Pyramid is our newest computer. Like the DEC-20, it is designed to be an interactive machine. However, it has less storage capacity than the DEC-20 and there is only one tape drive. The Pyramid may be used for academic and scientific purposes by members of the University community. Administrative or business uses of the Pyramid and use by external users are not allowed.

See the specific Pyramid article in this *NEWS-LETTER* for further details. Our Pyramid has been named Sphinx, and its operating system is two versions of UNIX, a modern, flexible, and highly popular system. The two versions are the Berkeley 4.2 UNIX kernel and the AT&T System V UNIX. The capacity for running UNIX was a major consideration in the acquisition of the Pyramid.

Once again, when you open a Pyramid account, you also need an IBM account.

Microcomputers

Microcomputers are interactive computers that you operate directly. Sometimes they are called personal computers. There are many different kinds with diverse hardware configurations and software availability. If you want total control of your computing, including installation, operation, and maintenance, you may consider buying your own personal computer. You then have the advantage of selecting the hardware and software that meets your specific computing needs.

The Computation Center has negotiated discounts for microcomputer purchases with several manufacturers. A list of equipment and discounts may be obtained from the staff offices at 5737 S. University.

For people who would prefer to use microcomputers, but don't want to buy one, there are a limited number available for use at the Pick terminal cluster. Access to these microcomputers is de-

scribed in the article entitled, *IBM PCs at Pick* in this *NEWSLETTER*. In general, you purchase time at $2.00 per hour of use, by paying cash or charging to an IBM account.

Distributed Computing

A rather general guideline for selecting a computer is to choose the smallest and cheapest machine that can handle most of your specific computing needs. Because some campus computers will soon be interconnected via a network called Ethernet, you will be able to shift your work to a bigger or smaller computer as your needs change. So, it is a good idea to have access to different-sized machines. We recommend opening accounts on the IBM and DEC, at least.

There is another advantage to having an account on different machines in the network. Certain expensive input/output equipment is connected to only one or another computer. For example, two Xerox 9700s are connected to the IBM 3081D. The Xerox 9700 provides high quality printing, including multiple fonts like bold, italic, or proportional, typeset-like fonts.

Mechanisms exist for sending text produced on the DECs, or Pyramid, or even a microcomputer to the Xerox 9700. However, in order to do so, you must have an IBM account to which costs may be directly charged.

Thus far, the discussion has centered on the equipment. Now, we'll take a look at some typical computing needs. The comparisons will not include microcomputers because there are just too many alternative programs for the different machines. At this time, we do not recommend or support any particular microcomputer software.

Statistical Analysis

One of the more common computing needs at the University of Chicago is the need to analyze empirical data using statistical techniques. For the most part, the choice of computer depends on the amount of data, the sophistication of the analysis, and the degree of exploration required.

Although precise boundaries can't be placed, the greater the number of cases and variables, the bigger the machine required to analyze the dataset. Multivariate analyses become particularly greedy for core storage as the number of variables increase.

Finally, confirmatory analysis or hypothesis testing can be done either in batch or interactively. However, exploratory analysis is greatly facilitated in an interactive environment.

The availability of programs for statistical analysis should also be a consideration in your choice of computer. Programs like BMDP, SCSS, SPSS, and SPSS-X are available on the DECs and the IBM. SAS is only on the IBM; Minitab is only on the DEC. A package called S Software will be available on the Pyramid.

Text Processing

This is probably the second most popular computing need. Once again, the size and complexity of your need may dictate your choice of computer. Resumes, letters, short papers and reports could all be done easily on the DECs or Pyramid. Books or dissertations would be better done on the IBM.

The complexity of automated formatting would also influence your choice. Multiple indices, tables of contents, footnotes, bibliographies, or other specialized formats are more easily handled by programs on the IBM at this time.

There really are no common text processing programs across the machines, although EMACS exists on both the DECs and the Pyramid. Full-screen editors are available on the DECs and Pyramid, but are not currently available on our IBM. A full-screen editor allows you to see about twenty lines at a time on a terminal screen and to move anywhere on that screen in order to insert or modify the text.

The alternative to a full-screen editor is a line editor. You are allowed to enter or modify text on specified lines. All of our IBM editors at this time are line editors. There are also some line editors on the DEC.

In addition to the editing programs, there are formatting programs. To use a formatter, you create text with control codes inserted. These control codes indicate how you want the following text formatted. There are codes that center, align, justify, or double-space text, and more powerful codes which indicate that a paragraph or footnote or long quotation follows. These control codes are interpreted by the formatting program which then produces your final formatted text.

MUSE and EMACS are full screen editors on the DEC. RUNOFF is a text formatting program on the DEC. NROFF and TROFF are formatters for the Pyramid, which has EMACS, VI and ED (a line editor) as its editors.

On the IBM, SUPERWYLBUR functions as a line editor and SCRIPT and XSET are the major formatters. Special programs which use SCRIPT are also available. GML provides special commands needed for papers, reports, and memos. TREATISE provides the commands that produce a dissertation in the format required by the University of Chicago dissertation office.

Programming Languages

There are still some people who write their own programs. FORTRAN and PASCAL are available on the DECs, the IBM, and the Pyramid. The DECs also have APL and BASIC + 2. The IBM has COBOL and PL/I. The C-Language exists on the Pyramid and the DECs.

Graphic Routines

Since a picture is worth a thousand words, many people like to display information using charts or graphs. There is a Calcomp 1051 four-color pen-plotter available to DEC and IBM users. There are also a number of terminals which will allow you to see your graph before you commit it to paper. Again, there is different software on the different machines.

TELL-A-GRAF, CUECHART, and the Data Connection can be run on the DEC. They can also be run on the IBM through TSO. SPSS graphics can also be run on either machine, while SPSSX graphics only exists on the DECs and SAS/GRAPH only exists on the IBM. DISSPLA is only available on the IBM.

Further Information

As you can see, your choice of which computer to use depends on the mixture of your own computing needs. This article has only dealt with a few of the considerations. The Computation Center tries through several means to keep the University community aware of these many capabilities and how to use them.

This *NEWSLETTER*, ordinarily published once a month, is used to announce new products or revisions to old ones. It also lets you know about policies and procedures for the use of its facilities.

There is an extensive memo and manual system which provides the details on how to use various products. All memos are available on-line and some manuals are also on-line. There are racks of memos and manuals for your perusal located at all the public terminal clusters. Documentation is also kept at the Harper and Regenstein library reserves and may be checked out over-night.

A *Guide to the Computation Center* is also available. It provides more information about how you can use the facilities of the Computation Center.

When you logon to a computer, messages are displayed which announce changes in hardware or software, problems, or new features. More lengthy announcements are placed in an on-line Notice file, until they can be added to the appropriate memo.

Non-credit courses and seminars are regularly conducted by the Computation Center to help you learn about the above mentioned hardware and software. A *Curriculum Guide* is available at the staff offices and the terminal clusters. It describes the courses, their objectives, prerequisites, and what time of year they are offered. Quarterly time schedules of classes are also available at these locations. Most of these courses are conducted in our multi-media classroom located in Wieboldt 406.

The Computation Center is also experimenting with video-taped demonstration sessions. These tapes are available for viewing at USITE. See *Computation Center Video Classes Available At USITE* in this *NEWSLETTER* for more information.

Finally, there is a program advisor on duty at USITE between 9:30 and noon, and again between 1:00 and 4:30, Monday through Friday. During the academic quarters, there is also an advisor during the evenings and on Saturday and Sunday. The advisor will answer questions about the Computation Center, supported programs, or general procedures. He or she will also help you locate errors in your computer jobs. However, the advisor is not meant to be a long-term consultant. If you require extensive help, you may have to make an appointment with another staff member and, in some cases, may have to pay for this service.

This article is long, but it has only skimmed the surface of the facilities of the Computation Center. Hopefully, the discussion about the different computers and programs has helped you decide which computer is best for your needs.

Words To Live By

Stepping into the world of computing can be a little nerve-wracking. It doesn't help to find that everyone in that world communicates in a language which is completely foreign to you. To help you feel comfortable in this new world, we have assembled a collection of words you are likely to need. While this is by no means a comprehensive list of computer terminology, it should allow you some degree of comfort and confidence in your new venture. Some of these terms apply to computers in general, and some terms are specific to the University of Chicago computing environment.

Abbott- public terminal cluster located in Abbott 602A.

Batch- a type of computing in which you give the computer all of your instructions at once and then let it execute them.

Baud- refers to the speed at which information is transmitted between a computer and a terminal or a microcomputer.

Bin- first letter of the PERSON-ID. Output is sorted into bins so it will be easier to find.

Bit- the smallest unit of data in main computer storage. Bit comes from Binary digIT.

Byte- a fixed number of bits, considered a unit, to form a storage location.

Calcomp 1051- four-color plotter located at Operations.

Chip- one of our two DECsystem-20 computers.

Computation Center Classroom- our classroom located in Harper 406. Used for most of the classes given by the Center.

Connect Time- time you are actually logged on to the computer. You are charged for this.

Core- amount of internal computer memory.

CPU- Central Processing Unit. The "brain" of the computer. You are charged for the amount of CPU time you use in a session.

Crash- term used to indicate that a computer has stopped working, suddenly or unexpectedly.

Crerar- public terminal cluster located in the Crerar Library.

Cursor- special symbol on a CRT which acts as a pointer or attention-focusing device.

CUSP- Central Users Site Printer - route code for the Xerox 2700 laser printer at USITE.

Dale- one of our two DECsystem-20 computers.

Dataset- a collection of information which is operated upon as a unit.

DEC USER-ID- the name by which you are known to the DECsystem-20 computers.

Delivery- refers to where the output should be delivered after printing.

Disk- a storage device (often called a disk drive).

DOB- Data Option Board - a feature on some IBX telephones which enables you to attach a terminal to your telephone, dial the computer, and maintain communications with the computer, while using the phone for regular calls simultaneously. A DOB transmits data at higher speeds than a modem.

DOCLIST- a facility on SUPERWYLBUR and the DECs through which you can select documentation to be printed on the Xerox 9700s and say where that documentation should be delivered.

Down- describes a computer or system which is not currently operational, either intentionally or unexpectedly.

Ethernet- campus-wide connection between mainframes.

File- a collection of data.

Floppy- flexible disk - used to store data for microcomputers and free standing word processors.

Gandalf- controls the incoming lines for the computers. An "enter class" prompt on the terminal screen is from the Gandalf.

Hardcopy- output printed on a piece of paper.

Hardcopy Terminal- usually an Anderson-Jacobson terminal or a DECwriter. Your interactions with the computer are printed on paper instead of being shown on a screen.

Hewlett-Packard 2648- HP 2648 graphics terminals found at USITE.

HASP- default hardcopy form on the Xerox 9700s. 8 1/2" x 11" paper with three binder holes punched in it.

IBX- the name of the campus phone system which handles both voice and data communications.

JCL- Job Control Language- a language you use to tell the IBM 3081D what it needs to do to accomplish your job.

Landscape- specifies the orientation of printed output on the page. Landscape prints across the 11" dimension of an 8 1/2" x 11" sheet of paper.

Laser Printer- a printer which uses laser technology to produce high-quality hardcopy at much greater speeds than other printers.

Line Printer- a printer which prints line by line.

LOGON-ID- the combination of PROJECT-ID plus PERSON-ID. Used with the appropriate password, it allows you to logon the the MVS system.

Logon- the act of establishing communications with the IBM 3081D computer.

Logoff- the act of breaking communications with the IBM 3081D computer.

Login- establishing communications with the computer. Refers to the DECs and the Pyramid.

Logout- breaking communications with the computer. Refers to the DECs and the Pyramid.

Mainframe- refers to a large computer, specifically the CPU and the main memory.

Microcomputer- a small computer whose CPU is contained on one or just a few semiconductor chips.

Milten- an intermediary between MVS and SUPERWYLBUR. When you see the message "you are in milten," SUPERWYLBUR is down.

MM- Mail Manager- a facility for sending and receiving electronic mail on the DECs.

Modem- a device for transmitting data between terminals and computers.

MUSE- a full-screen text editor on the DECsystem-20 computers.

MVS- Multiple Virtual System- the operating system on the IBM 3081D.

NHOL- an alternate hardcopy form for the Xerox 9700s. Same as HASP, but has no holes.

Notice File- online file on both MVS and the DECs with up-to-date information about the system.

Offline- refers to a medium or device not immediately accessible by a computer system. Tapes, for example, are offline storage, and must be mounted before data stored there can be accessed. The SUPERWYLBUR "list offline" will list a file at a remote printer rather than on your terminal.

Online- refers to a device or medium directly accessible by a computer system. "Online" documentation, for example, can be read at your terminal.

Page- a unit of storage on the DEC disks. A page is 512 bytes.

Password- a combination of letters and digits, up to eight characters long, which is associated with your PERSON-ID on MVS. It must be given when logging on to prove that you are the owner of the given PERSON-ID. On the DECs or the Pyramid, your password is associated with your USER ID. It may or may not be the same password you use on MVS.

PCA- Personal Computing Account- each student, hospital intern, and hospital resident is entitled to a $200 PCA this year. Each faculty member is entitled to a $400 PCA this year. See the Business Office for details about getting a PCA.

PERSON-ID- a four-character string by which we keep track of your use of all or any of the Center's mainframes. You have the same PERSON-ID as long as you are at the U of C.

Pick- public terminal cluster located in Pick 123.

PICK- route code for the Xerox 2700 laser printer at PICK .

Portrait- specifies the orientation of the printed output on the page. Portrait will print across the 8 1/2" dimension of an 8 1/2" x 11" page.

Profile- a macro automatically executed upon logging in on SUPERWYLBUR. It is composed of commands chosen by the user.

Program Advisor- a member of the Computation Center staff who is available at USITE to answer questions about your computing problems. The Program Advisor is generally available during business hours and some nights and weekends during the regular quarter.

Program- a set of steps for the computer to follow to accomplish a specific task.

PROJECT-ID- a three-character string which identifies the group to which work should be billed.

RAGB- **RAG B**ond paper. Can be specified as the form used on the Xerox 9700s.

Regenstein- public terminal cluster located in Regenstein 201.

Room- specifies where output should be delivered via messenger.

Route- specifies the printer where you want a job to print.

Screen- refers to a terminal with a video screen.

Sphinx- the Pyramid 90x computer.

SUPERWYLBUR- a text editor on the IBM 3081D computer. In addition to editing text, you can also monitor your jobs as they run via SUPERWYLBUR.

System Messages- messages which are shown when you log on. They often contain information about the status of the system.

Tape- refers to magnetic tape. It is an economical way to store data offline. When you want to work with the data, the tape is mounted on a tape drive.

Televideo 950- TVI950- the most common terminal found at USITE.

Terminal- a device which allows you to communicate with the system.

Test Time- periods during which machines are purposely unavailable to users so that maintenance or testing may be done.

Text Editor- a program which allows you to enter text and then manipulate it. SUPERWYLBUR and TSO Edit are the text editors on the IBM 3081D. MUSE and EMACS are editors on the DECs. EMACS is also on the Pyramid.

TOPS-20- the operating system used on both DECsystem-20 computers.

Track- a unit of storage on an IBM disk. A track is 19069 bytes.

TSO- Time Sharing Option- runs interactively on the IBM 3081D computer.

UNIX- the operating system on the Pyramid 90x computer.

Up- describes a computer or system which is functioning and available in a normal manner.

USITE- the central **U**sers **SITE** located in Wieboldt 310. It is the main terminal cluster on campus. A number of different kinds of terminals are located there, along with 2 kinds of printers (laser and line). The Program Advisor and a branch of the Business Office are also located at USITE.

USITE graphics printer- a draft-quality graphics printer at USITE.

Xerox 9700- a high-resolution, high-speed laser printer made by Xerox. We have two of these, located at Operations Site.

Xerox 2700- a high-resolution laser printer, smaller and slower than the Xerox 9700. We have two of these, one at USITE and one at PICK.

Data Resources Available Through The Computation Center

The Computation Center provides machine-readable data for secondary analysis. The data collection is available primarily on tapes, but one frequently-used study, the General Social Survey of NORC, is available online.

Social Science Data

The data collections we now hold on tapes are generally of most interest to social scientists. For example, we hold the American National Election Studies, the National Longitudinal Surveys of Labor Market Experience, the Panel Study of Income Dynamics, Congressional Roll Call Voting Records, U. S. Historical Census data, and U. S. Election Returns. There are over 100 studies currently in the collection and the Center can obtain others upon request. For information on how to find out what the specific studies in the collection are and how to begin using them, see Memo 4371 and Memo 4336.

Census Data

The Computation Center has acquired data from the 1980, 1970, and 1960 Census, as well as special software for extracting the data and analyzing it. We have summary files, the EEO file, and micro-data from the 1980 Census, summary files from 1970, and public use samples from the 1970 and 1960 Censuses. A list of the specific census files we have acquired is in Memo 4222. Information on programs for accessing the data is in Memo 4341 (1980 data) and Memo 4190 (1970 and 1960 data).

The Center also provides tapes containing data only for census tracts within the Chicago city limits, so that users can save the costs involved in selecting from the larger Illinois tapes. Information on the 1970 Chicago data is in Appendix C of Memo 4190; information on the location of the 1980 data is in Memo 4222.

General Social Surveys

The Center maintains an online version of the General Social Surveys (GSS) in SCSS format, so that users can perform interactive statistical analysis using the DEC. The General Social Surveys, which are administered by NORC, measure changes in the attitudes and behavior of Americans in such critical areas as political participation, employment, personal and family life, and intergroup relations. Recently the Center has updated the files. The 1984 data is now available, and the cumulative file contains data from 1972-84. For more information on the GSS data, see Memo 4371 and Memo 4340.

How To Locate Data Not Available At The Computation Center

The major disseminator of machine-readable data files in the social sciences is the Inter-university Consortium for Social and Political Research. The Consortium's catalog lists over 1000 data collections that it can provide to users. As a member, the University can order any collection a user wants; generally there is no cost. Memo 4336 and Memo 4371 list the locations of the Consortium's catalog.

A good source for public opinion data is NORC, which makes its own archived studies available. For information about these and about the existence of other public opinion data, contact Pat Bova, NORC's librarian, 962-1213.

If you cannot locate the data you need through the sources listed above, contact Melissa Trevvett, Data Resources Coordinator, 962-6092, who will assist you in locating the datafile you need.

Computing Support for Data Analysis

The University supports commonly used statistical software packages, such as SPSS, SPSSX and SAS, as well as several designed for specialized use. Memo 4246 lists these packages, including which computer they can be used on and their documention.

The Social Science Computing Facility in 123 Pick Hall provides terminals, documentation, and staff to assist researchers. The Social Science Advisor, John Raz, on duty weekday afternoons, specializes in data analysis and social science computing problems. The Program Advisor at USITE can also answer many questions that users may have about data management, analysis, and programs.

MVS

Xset and XICS: Typesetting Emulation With The IBM 3081D

The Xerox Integrated Composition System (XICS), newly installed on the IBM 3081D, is a text composition language designed for use with the Xerox 9700 laser printer. XICS is an extremely powerful and versatile software package which allows the user to control the placement of text on the printed page to within 1/72nd of an inch (a printer's point).

While XICS, as distributed, is extremely flexible, it requires that many parameters be set to define an output page. To facilitate the use of XICS, the Computation Center has developed Xset, which is a set of copy marks which access basic XICS commands and macros derived from these commands. Xset automates many of the text formatting functions available in XICS, such as pre-defining page layouts and footnotes. In the Xset environment, the Xerox 9700 printer functions as a page printer emulating a typesetter, rather than a line printer. While a line printer replicates a typewritten page, controlling only the number of fixed width spaces between words on a line and the number of blank lines between lines of text on a page, the typesetter emulation environment measures space in printer's points.

This *NEWSLETTER* was prepared using XICS through Xset. Xset's typesetting emulation provides several features that distinguish the Xset output from line printer output. First, Xset allows you to select from the new proportional fonts which are available in a variety of sizes, ranging from 6 to 18 printer's points in height. In the proportional fonts each character has a specific width associated with it rather than each character occupying an area of the same width (as in the Pica and Elite fixed pitch

fonts). Second, Xset enables you to change from a portrait page to landscape within the same document. Third, it is possible to specify the size of vertical spaces (leading) between lines of text in printer's points.

A catalogued procedure for Xset has been developed and installed. An Xset execution macro, PUB Xset, has been installed on SUPERWYLBUR and will create the necessary JCL by prompting for the job parameters. The execution macro and program will provide the options of reading output at a terminal or printing a proof copy on a line printer in addition to typesetting on the Xerox 9700. In SUPERWYLBUR on the IBM, type:

? pub xset

Memo 4370, "The Xset Primer," which describes and illustrates the Xset commands, is now available. Copies can be obtained through the public macro, PUB XSETMAN, on the IBM. The printing expense will be charged to your MVS account. The estimated printing cost to internal academic users for a request run at normal priority during the day is $7.00.

IBM 3081D Upgrades

On July 29, the Center installed eight additional megabytes of memory on the IBM 3081D system. This upgrade reduced the high paging rate that we were experiencing. The net result is that customers should perceive significantly better batch throughput and improved terminal response time. One additional side benefit is that the 3081 had several system crashes during June and July that were induced by problems related to the lack of memory. With the additional memory, those system crashes should not recur.

TOPS-20

MM and MAILNET: Electronic Mail Systems On The DECs

Electronic mail resources at the University of Chicago provide for on-campus mail communications as well as linkages to colleges and universities located throughout the United States and Europe. The following is a description of the choices available on our DECsystem-20s.

- MM: a campus-wide, electronic mail system running on the DEC-20s. Included on MM is an on-line directory of users (i.e., name, phone number and DEC users ID). While having your DEC user ID listed in the on-line directory is not mandatory, it does make it easier for others to send mail to you.

See DOCLIST: Request MM, MMREF

- MAILNET: a dial-up, long-distance network for transfer of mail between computers. It connects a number of universities through a central site (hub) located at MIT which picks up and transmits mail to member sites. Our implementation uses MM as a means to forward messages to the MIT site, which then forwards them on to other sites.

MAILNET was designed to provide low-cost communications among diverse computer systems. MAILNET currently links 21 colleges and universities in the U.S. and Europe.

See NOTES: MAILNET

XFER Facilitates Use of TRANSFER Through Wildcarding

Until recently, if you wanted to transfer multiple files between the two DECs using TRANSFER, you had to submit the files one at a time. This was time consuming and cumbersome. To make the procedure a little easier, the XFER program was installed. XFER allows the use of wildcarding characters (* or %) when naming files to be submitted to TRANSFER. For example, tst*.for would transfer all files whose first level begins with tst and whose second level is for. So, tstget.for would be transferred. Once the files to be transferred and the structure to which they are to be sent are given the the XFER program, it submits them one at a time to TRANSFER. This saves the user from having to retype similar file names over and over again.

XFER is limited, however, in that it can only SEND files. It cannot also RETRIEVE files as the TRANSFER program can. That is, when logged in to Chip, you can only SEND files to Dale or one of its structures. When logged in to Dale, you can only SEND files to Chip or one of its structures.

The following is an example of a session using XFER. Remember that XFER submits files to TRANSFER one at a time, so the session POPS back to TOPS-20 after each file is submitted to TRANSFER. The session will automatically return to TRANSFER until all files have been SENT.

@xfer
The XFER program allows you to SEND
groups of files from your connected
directory on CHIP to your DALE
directory by allowing file
specifications which contain either
the "*" or "%" wildcard characters.
The file names are passed one by
one to the "TRANSFER" program.
When you get the "enter file
specifications:" prompt enter the
filename. eg: *.FOR

enter file specifications: tst*.for

Send files to < DS1: > : ds2:

 TOPS-20 Command processor 5(712)
@TRANSFER SEND TSTGET.FOR.1 DS2:
@POP

 TOPS-20 Command processor 5(712)
@TRANSFER SEND TSTMN4.FOR.1 DS2:
@POP

 TOPS-20 Command processor 5(712)
@TRANSFER SEND TSTTEK.FOR.1 DS2:
@POP
[TRANSFER DONE]
CPU time 0.96   Elapsed time 30.13

PYRAMID/UNIX

Our New Pyramid Computer: A Unique Unix Machine

The Pyramid 90x, a mini computer that runs a UNIX operating system, arrived this summer, and is now available to the general academic community.

The new system is of special interest to:

1) Those who are computer scientists, or who have a strong interest in this discipline

2) New users, perhaps from other universities, who are already experienced with UNIX

3) Anyone engaged in the development of programs which are to run on other computers which support UNIX. UNIX runs on the entire spectrum of computers, from mainframes to micros. Programs developed on the Pyramid will be easily transportable to any other UNIX operating system.

The acquistion of the Pyramid enhances the general community's ability to communicate with other UNIX users, at other universities and on this campus. Tapes may be created and sent to other UNIX installations anywhere, or received from them. Data may be transferred between our other computers and the Pyramid. (This transfer will become easier as the Ethernet project moves ahead.)

Many of our first Pyramid customers will be using the new machine to do class or research-related work, but anyone qualified for a PCA may request that they be enrolled on the Pyramid. It is neces-

sary to have a valid MVS PERSON-ID to open a Pyramid account.

The Pyramid is unusual in that the machine was built specifically to run the UNIX operating system. Our Pyramid's operating system is actually two versions of UNIX. They are the Berkeley 4.2 UNIX and the AT&T System V UNIX.

The details of our particular hardware installation are:

- The Pyramid 90x, a 32-bit mini with 6MB (million bytes) main memory

- A 32K data cache which will reduce time to access elements of large data arrays

- A floating-point processor using IEEE standard formats

- Two 450MB (million bytes) disk drives

- A 9-track 1600 bpi tape drive

- Two Intelligent Terminal Processors supporting up to 16 users each

- A TALARIS printer

- An Ethernet Interface

FORTRAN-77, Pascal, and C languages are available, plus UNIX operating system features of direct interest to users:

1) The C shell command language that is the user interface to the operating system. The Bourne Shell (SH) is also available.

2) The Programmer's Workbench (PWB) -- utilities for generating, maintaining, and documenting all types of software, including the MAKE and SCCS programs.

3) A full set of utilities for document preparation, editing and text formatting, including NROFF, TROFF and MS.

The new system supports up to 32 user lines, and is able to be expanded, should demand increase.

The Computation Center is planning a two-part seminar for the early fall quarter to introduce the new system. See *University Of Chicago Computation Center Time Schedule of Classes* in this issue of the *NEWSLETTER* for further information on specific dates, and how to register.

Complete sets of written documentation for AT & T's System V UNIX, and for the Berkeley UNIX Version 4.2 will be available at Harper and Regenstein Reserve Reading Room. Sets of documentation which include User's Guides and Programming Reference Manuals for both UNIX systems will be available at all clusters. The System V Editing Guide, and Shell Command Reference Manual will also be available at the clusters.

It will be our general policy to keep as much documentation online as possible, including our local documentation. Online documentation is accessed via the UNIX "man" command. The per cent sign is the UNIX system prompt, so, once you have an account and can logon, you can begin your online exploration with the command:

%man man

where "man" is the UNIX command to access online documentation and the second "man" is a keyword indicating that you want documentation about the documentation system itself.

MICROCOMPUTING

IBM PCs At Pick

There are now two IBM Personal Computers located at the Social Science terminal cluster in Pick, room 123. Each of these micro-computers has 640K of memory and two double-sided diskette units which hold 320K each. There is also an Okidata graphics printer attached to one IBM PC. A communications package, called KERMIT, which allows files to be transferred between the PC and one of the main Computation Center Computers is also available.

Software installed on these machines includes the DOS (Diskette Operating System), BASIC, BASICA (Advanced BASIC), and WORDMARC. There is also a tutorial program which helps people learn how to use the equipment. If there is enough demand, other software may be acquired at a later time.

The IBM PCs may be used by faculty, staff, and students with valid University identification. Access cards may be purchased at the USITE Business Office using cash, or, if you are authorized, by charging the cost to a valid MVS LOGON-ID. Note that Personal Computing Accounts (PCAs), subsidy research accounts, and class accounts cannot be used to pay for micro-computer use.

The charge will be $2.00 per hour and each access card will show the amount of time that was purchased. In order to use an IBM PC, give your access card and University identification card to the cluster attendant at Pick. The attendant will attach the keyboard to the micro and provide you with the system diskette. You will have to provide your own diskettes for saving data or programs. The 5 1/4" diskettes needed for the IBM PCs are generally available at computer stores. Here on campus, they are available at the University Bookstore. When you are done, or when you run out of time on your access card, the attendant will detach the keyboard from the micro, mark the time used on your access card, and return the access and identification cards to you.

The micro-computers at Pick were purchased by the Division of Social Sciences with the understanding that they would be used by the University community. As such, they are the first to be made available at a public cluster on campus. However, the Computation Center is planning to place micro-computers at USITE. Watch the *NEWSLETTER* and system messages for further information.

Microcomputer Demonstration and Development Lab

Demonstrations of microcomputer hardware and software are available to the user community through the Demonstration and Development Lab located at 5737 S. University. The lab provides a no-pressure, no-hype atmosphere in which to explore the many microcomputing alternatives available. Individuals, or groups no larger than eight persons, may meet with lab personnel to compare and contrast the hardware and software which are available. There is no charge for hardware or software demonstrations. A DEC-20 program, MICLAB, can be accessed by entering MICLAB in response to the TOPS-20 prompt for an online overview of the lab's inventory.

In addition to giving demonstrations, lab personnel also test micro software/hardware and micro-to-mainframe communications. Computation Center staff members use the lab for development, and university users can use the lab for short projects, for a fee.

Individuals or groups should call Cathy Kosto at 962-7151 to make arrangements with lab personnel for use of the lab. The lab is available at the following times: Monday through Thursday 9:00 a.m. to 12:00p.m., and 2:00 p.m. to 5:00 p.m.

To select a group of icons on the desk top one at a time, hold down the shift key and click on the icons to be selected. The icons that were clicked become part of the selection group. This group can be moved and copied as one. Shift-clicking on an item that is already selected causes that item to be dropped. This is useful to discard items from a rectangular region.

Clicking in the gray area of a scroll bar will move the pane of the window up or down one pane size. You can use this to "page" through a document.

Hardware And Software Discounts Available

In addition to the Apple University Consortium agreement, the Computation Center has signed agreements with a number of hardware and software dealers for discounts which are available to University departments and, in most cases, anyone with a University of Chicago ID. A comprehensive list of the discount agreements and the participating vendors is available from Cathy Kosto at 5737 S. University (962-7151). The listing of vendors and products in no way implies endorsement by the Computation Center. These discounts range from 5% to 75%.

New Hardware And Software In The Lab

The Demonstration and Development Lab, located at 5737 S. University has the following new hardware: a Zenith 150 microcomputer and a Hewlett-Packard Laser Printer. New software consists of: Lotus 1-2-3 and Memomaker for the Hewlett-Packard 150, Think Tank for the the Macintosh and the IBM-PC (demo version only for the IBM-PC), and Griffin-Terminal and Filevision for the Macintosh. Lab personnel can demonstrate Think Tank, Griffin-Terminal, and Filevision. Lotus 1-2-3 and Memomaker are available for users to test themselves. Call Cathy Kosto at 962-7151 to make an appointment.

Timely Tips For Macintosh and Lisa

The following are a few useful tips and short cuts that are not widely known, but may be useful when working on the Macintosh or the Lisa (under Mac-Works).

KERMIT: Microcomputer/Mainframe Communications

The Computation Center has installed a production version of the KERMIT program for Time Sharing System (TSO) running on the IBM 3081 computer. KERMIT is a file transfer and terminal emulation program developed as a joint effort of Columbia University and many other universities. TSO KERMIT was developed by Ron Rusnak and Gary Buchholz from the University of Chicago Operating Systems group.

KERMIT allows micro users to dial into another computer using their microcomputer as a terminal. It also provides for error free uploading and downloading of files between the micro and the mainframe computer. Last year, KERMIT was installed on our DEC-20s, and this year, a version has been installed on the IBM 3081 under TSO.

Since there are so many different microcomputers and versions of KERMIT, it will be impractical for the Computation Center to support them all. In some instances, we will only provide copies of the programs and documentation as we receive them.

In other cases, we will be able to test the programs and revise the documentation with specific reference to our systems. Those versions that we are able to test will be available on diskettes, along with printed documentation, at the USITE business office for a nominal fee of $15. Currently, versions of KERMIT are available for connecting the following microcomputers and mainframes:

IBM PC	DEC-20, IBM 3081
APPLE //	DEC-20, IBM 3081
Decmate	DEC-20
Kaypro	DEC-20

Note that the IBM PC version of KERMIT should also work with IBM PC look-alikes, such as Compaq, Zenith, and Columbia.

KERMIT code changes were necessary to allow file transfers between the IBM 3081 and the IBM PC or Apple //. Users who purchased earlier versions from USITE may trade their old versions for the new one for $5 at the USITE business office.

We are now planning to test and document KERMITs for the HP150, DEC Rainbow, generic CP/M, Osborne, Morrow, and HP9000 microcomputers. If your micro is not included in the above lists, there may be an untested copy for you to prepare, test, and use. Call the Program Advisor (2-7624) for further information.

Although we are testing and documenting some versions of KERMIT, we are not in a position to provide full programming support for any of them. If there are problems with versions of KERMIT that were purchased from USITE, please contact the Program Advisor, who will forward your report to Columbia University.

The following KERMIT manuals and memos are now available through DOCLIST:

KERMITUG	KERMIT Users Guide
KERMITPM	KERMIT Protocol Manual
KERPCDOS	KERMIT for the IBM PC
KERAP65	KERMIT for the Apple //
KERDECMT	KERMIT for the Decmate
KERKPRO	KERMIT for the Kaypro

Macintosh Software Upgrades

(This is a reprint from the July 15 issue of the *NEWSLETTER* for the benefit of those people who were away for the summer.)

Apple has enhanced the Macintosh operating system software and MacWrite/MacPaint. The enhancements include a new disk copy application, a new Finder, improved configuration of disks, new fonts, new font mover documentation, and superscript/subscript and display/remove header or footer commands for MacWrite.

To update your software, bring your System Disk, two blank disks, and your Macintosh warranty card to the USITE Business Office. In exchange for your ID, the Business Office personnel will give you a copy of the documentation on the "Software Enhancements," instructions on how to copy the new software, and loan you the master disks so that you can make the copies on a Macintosh at USITE. Be sure to remove all data files that you want to keep before you bring your disks to USITE.

User Group News

Macintosh Users Group

The Macintosh Users Group meets the third Thursday of each month. The next meeting will be September 20 at 6 p.m. in Eckhart 133. Scheduled for the meeting will be the forming of special interest groups. Users are encouraged to attend and to participate in the group that is of interest to you. If you are unable to attend the meeting you may contact Eric DeVos at 955-2442 (afternoons), or Drucilla Shifman at 955-1954, for more information.

TRS-80 Users Group

The TRS-80 Users Group will not meet in September. Their next meeting will be October 17. For more information, call Gene Gragg or Miguel Civil at 962-9542.

SKYP-Kaypro Users Group

SKYP, the Southside Kaypro People, meets the second Wednesday of each month at Value Added Systems on the Mezzanine of the Del Prado at 1701 East 53rd Street at 7:30 p.m. The next meeting will be October 10. For more information call Chris Gruber at 373-4584.

Osborne Users Group

The Osborne Users Group meet the first Wednesday of each month at noon in the Computation Center classroom, Harper 406. The next meeting will be October 3.

DEPARTMENTS

People

The following people have transferred from Applications Systems to Instruction and Documentation Services as a result of the reorganization: all cluster employees; **Don Crabb**, Educational Coordinator; **Ed Donner**, Computer Cluster Supervisor; **John Raz**, Social Science Advisor; **Chistian Delmar**, and **Eric Nelson**, Program Advisors, have also been transferred from Applications Systems to Instruction and Documentation Services.

Promotions are: **Charles Hodge** from Sr. Programmer/Analyst to Lead Programmer/Analyst; **Frederic Johanson** from Sr. Programmer/Analyst to Lead Programmer/Analyst; and **William Sterner** from Sr. Staff Analyst to Lead Staff Analyst.

In Information Systems, **Thomas Barron** and **Rasa Varanka** are the new Jr. Programmer/Analysts I. **Harvey Lew** and **Nancy Wray**, Jr. Programmer/Analysts II, have left the group. **Rebecca Wheeler**, Jr. Programmer/Analyst I, is on leave of absence.

Jerome Jordan is the new Documentation Specialist II for Instruction and Documentation Services. **Charles Blair** has transferred from the Law Library to our Library Computer Systems group as a Library Operations Analyst, and **Peter Hayward** has transferred from the Comptroller's Office to our Administrative group as Assistant to the Director.

Notice File

New in the MVS Notice File

08/17/84 TRT5 New Version of TREATISE

08/07/84 TRT4 TREATISE Printing With Elite Fonts or Other Page Fonts

08/07/84 GRAF1 Tell-A-Graf Ver. 4.6 Available On IBM Through TSO

08/03/84 DOC6 Two New KERMIT Manuals in DOCLIST

08/01/84 SPSS14 New Name For SPSS-X Load Modules

07/10/84 TRT3 Bug In Table Plates Fixed

07/05/84 SCRP18 Known Bugs In SCRIPT 83.1

New in the DEC Notice File

08/17/84 TRT1 New Version of TREATISE On The IBM 3081

08/10/84 MUSE4 Problem With Superscripts and Subscripts in MUSE97

08/03/84 DOC8 Two New KERMIT Manuals in DOCLIST

DEC-20 System Wide Mail

The following items are currently in System Wide Mail on the DEC-20:

26-Jun-84 Alternate Fonts Available On 9700 Via MUSE

9-Jul-84 MVS Change (MVS Password) Command

17-Jul-84 TOPS-20 Version 5.1 Delayed

30-Jul-84 DS2: Now Available

30-Jul-84 DALE Printing Now Routed to 9700

3-Aug-84 Two New KERMIT Manuals in DOCLIST

10-Aug-84 Problem With Superscripts and Subscripts In MUSE97

17-Aug-84 New General Social Survey File Available

17-Aug-84 New Version Of TREATISE On IBM 3081

New Documentation

4246 *Guide To Software* This revision updates the software version changes and additions made over the past several months.

4270 *Computation Center Online Documentation: How To Read it On A Terminal and How To Obtain Printed Copies* This revision deletes the sections on "Batch Printing" and "Using Arguments." Added are the SUPERWYLBUR macros for printing copies of memos and manuals and examples of reading at

a terminal on the DEC or IBM.

4276 *Using SAS at the University of Chicago* The SAS/GRAPH section has been completely revised for Version 82.3. It includes information on using device-independent graphics datasets, and other graphics enhancements.

4328 *Using The Xerox 9700 Printers* Adds information on the DEC SYMGR program.

4335 *Selecting Symbol Sets* In this revision the DEC SYMGR program has been added, obsolete information on SYMPOST removed, and list of restricted characters revised.

KERKPRO *KERMIT For The KAYPRO* Describes how to use KERMIT on the KAYPRO to communicate with the DEC-20s.

New Manuals Available through DOCLIST

The following manuals are available in DOCLIST:

PDSINTSO - R147 Effective Use Of The
       TSO PDS Command
TSOIOF - R150 The Interactive Output
       Facility (IOF)
KERMITUG - R138 KERMIT Users Guide
       (formerly KERMIT)
KERMITPM - R138A KERMIT Protocol Manual

MVS Utilization in June 1984

SERVICE PROVIDED	IBM 3081/MVS June 1984	IBM 3081/MVS May 1984	AMDAHL 470V8/SVS June 1983
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	13:23	9:30	8:00
non-setup jobs	10:45	7:17	5:00
tape setup jobs	51:44	44:20	74:00
CPU-hours used	275 hrs 9 min	324 hrs 3 min	115 hrs 55 min
SUPERWYLBUR sessions	26,804	32,202	37,428
CPU hours	17 hrs 36 min	20 hrs 54 min	14 hrs 42 min
connect hours	19,953 hrs	24,535 hrs	21,679 hrs
average session	44 min	45 min	34 min
average CPU/session	2.36 sec	2.33 sec	1.41 sec
TSO sessions	3,778	3,814	2,149
CPU hours	5 hrs 4 min	7 hrs 21 min	1 hr 28 min
connect hours	1305 hrs	1334 hrs	553 hrs
average session	20 min	21 min	15 min
average CPU/session	4.50 sec	7.00 sec	2.46 sec
Jobs submitted	62,386	73,607	74,019
Steps executed	105,084	116,952	89,317

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (includes 85% of all jobs).

Top Twenty MVS Programs in June 1984

Program	Description	Percent	Count
WYLLIST	SUPERWYLBUR List Offline	11.27	12909
SASLPA	SAS	10.78	12339
UCFLBL20	FILEBOL	8.83	10105
IBMDEC	IBM/DEC link utility	4.93	5641
SORT	SyncSort	4.25	4866
IEWL	Linkage editor	3.64	4168
IEBGENER	IBM file handling utility	2.93	3350
PGM = *.DD	User defined routines	2.45	2802
MARKYBOL	Systems utility	2.43	2780
IEFBR14	IBM utility - null step	2.38	2723
SUCCESS	Operating Services utility	2.21	2536
FAIL	Operating Services utility	2.20	2514
SPSS	SPSS Version 9	2.04	2336
SCRIPTW	SCRIPT	1.99	2268
IGIFORT	FORTRAN G compiler	1.72	1965
IDCAMS	VSAM utility for catalog operations	1.42	1621
BATCH204	Model 204 utility	1.27	1451
IEHPROGM	IBM utility for dataset maintenance	.89	1020
IEBCOPY	IBM utility to copy or compress a PDS	.89	1019
IEFIIC	Oversees batch job execution	.78	888
IKFCBL00	COBOL VS compiler	.68	776

CHIP - DECsystem-2060 Utilization in June 1984

Account Period	June 1984		May 1984		June 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	91.6	6238	108.8	6898	52.4	3561
EVENING	35.3	959	40.5	1522	11.8	601
OVERNIGHT	48.0	1028	54.9	1424	23.2	4679
TOTAL	174.9	8225	204.2	9844	87.4	4679

Top Twenty Chip Programs in June 1984

Program	Description	Percent	Count
OPR	Operator functions	11.29	8997
MM	Electronic mail manager	8.63	6876
EXEC	TOPS-20 command processor	6.54	5211
SHRSRV	File transfer daemon	5.36	4266
MMAILR	Network mail daemon	5.35	4265
SYSJOB	System job controller	5.35	4265
WATCH	Generates these statistics	5.35	4265
SYSDPY	Operator interface with job queues	5.35	4259
WINDOW	Full screen PTYCON	5.34	4251
IBMSPL	MVS link daemon	5.18	4126
EMACS	Full screen editor	4.92	3923
MUSE	Full screen editor	4.39	3500
PTYCON	Pseudo-terminal controller	2.90	2311
1022	Database system	2.78	2217
SENDER	Local mail daemon	2.16	1721
BATCON	Batch controller	2.00	1592
PEXEC	Test version of EXEC	1.96	1559
SED	Full screen editor	1.76	1403
EDIT	Line editor	1.21	966
DEMAND	Data management system	1.18	940

DALE - DECsystem-2060 Utilization in June 1984

Account Period	June 1984		May 1984		June 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	85.0	6624	115.1	9425	110.1	8976
EVENING	27.8	1584	55.2	3794	31.7	2350
OVERNIGHT	50.4	1758	73.9	3076	45.1	2093
TOTAL	163.2	9966	244.2	16,295	186.9	13,419

Top Twenty Dale Programs in June 1984

Program	Description	Percent	Count
1022	Database system	20.27	19233
OPR	Operator functions	8.88	8425
EXEC	TOPS-20 command processor	5.57	5290
WATCH	Generates these statistics	4.50	4268
SYSJOB	System job controller	4.50	4268
MMAILR	Network mail daemon	4.50	4268
SYSDPY	Operator interface with job queues	4.50	4267
WINDOW	Full screen PTYCON	4.49	4264
IBMSPL	MVS link daemon	4.43	4202
SHRSRV	File transfer daemon	4.42	4196
EDIT	Line editor	4.27	4051
MM	Electronic mail manager	3.52	3343
PTYCON	Pseudo-terminal controller	2.77	2625
MUSE	Full screen editor	2.67	2531
EMACS	Full-screen editor	2.50	2375
SED	Full screen editor	1.90	1807
SENDER	Local mail daemon	1.81	1719
DEMAND	Data management system	1.48	1409
BATCON	Batch controller	1.34	1273
TYPE	TOPS-20 command	1.28	1217

MVS Utilization in July 1984

SERVICE PROVIDED	IBM 3081/MVS July 1984	IBM 3081/MVS June 1984	AMDAHL 470V8/SVS July 1983
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	13:29	13:23	6:00
non-setup jobs	9:41	10:45	3:00
tape setup jobs	56:59	51:44	124:00
CPU-hours used	318 hrs 0 min	275 hrs 9 min	104 hrs 31 min
SUPERWYLBUR sessions	26,576	26,804	30,583
CPU hours	16 hrs 54 min	17 hrs 36 min	12 hrs 16 min
connect hours	19,929 hrs	19,953 hrs	17,776 hrs
average session	44 min	44 min	34 min
average CPU/session	2.29 sec	2.36 sec	1.44 sec
TSO sessions	3,273	3,778	1,613
CPU hours	4 hrs 31 min	5 hrs 4 min	1 hr 17 min
connect hours	1186 hrs	1305 hrs	392 hrs
average session	21 min	20 min	14 min
average CPU/session	4.58 sec	4.50 sec	2.87 sec
Jobs submitted	62,006	62,386	58,608
Steps executed	107,931	105,084	75,138

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (includes 85% of all jobs).

Top Twenty MVS Programs in July 1984

Program	Description	Percent	Count
SASLPA	SAS	10.75	12660
WYLLIST	SUPERWYLBUR List Offline	10.09	11874
UCFLBL20	FILEBOL	9.66	10196
IBMDEC	IBM/DEC link utility	4.25	5000
SORT	SyncSort	3.87	4552
IEWL	Linkage editor	3.72	4385
IEBGENER	IBM file handling utility	3.25	3822
IEFBR14	IBM utility - null step	2.65	3125
MARKYBOL	Systems utility	2.62	3082
SPSS	SPSS Version 9	2.40	2825
SUCCESS	Operating Services utility	2.32	2737
FAIL	Operating Services utility	2.29	2690
PGM = *.DD	User defined routines	2.28	2686
IGIFORT	FORTRAN G compiler	1.70	2002
IDCAMS	VSAM utility for catalog operations	1.43	1685
SCRIPTW	SCRIPT	1.35	1585
BATCH204	Model 204 utility	1.21	1425
IEL0AA	PL/I compiler	1.10	1292
IEBCOPY	IBM utility to copy or compress a PDS	.89	1048
IEFIIC	Oversees batch job execution	.89	1047

CHIP - DECsystem-2060 Utilization in July 1984

Account Period	July 1984		June 1984		July 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	81.5	5145	91.6	6238	58.3	3682
EVENING	31.2	812	35.3	959	14.3	657
OVERNIGHT	38.7	642	48.0	1028	22.6	578
TOTAL	151.4	6599	174.9	8225	95.2	4917

Top Twenty Chip Programs in July 1984

Program	Description	Percent	Count
OPR	Operator functions	8.86	6421
MM	Electronic mail manager	7.98	5783
EXEC	TOPS-20 command processor	7.08	5126
WATCH	Generates these statistics	6.12	4433
SYSJOB	System job controller	6.12	4433
MMAILR	Network mail daemon	6.12	4433
IBMSPL	MVS link daemon	6.11	4426
SYSDPY	Operator interface with job queues	6.10	4422
SHRSRV	File transfer daemon	6.10	4422
WINDOW	Full screen PTYCON	6.00	4349
MUSE	Full screen editor	4.06	2942
EMACS	Full screen editor	3.96	2869
PTYCON	Pseudo-terminal controller	3.00	2171
PEXEC	Test version of EXEC	2.56	1856
SENDER	Local mail daemon	2.26	1639
1022	Database system	1.90	1374
BATCON	Batch controller	1.84	1331
EDIT	Line editor	1.25	906
SED	Full screen editor	1.14	828
ROGUE	Game	1.09	793

DALE - DECsystem-2060 Utilization in July 1984

Account Period	July 1984		June 1984		July 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	78.7	5979	85.0	6624	79.3	7645
EVENING	38.6	1320	27.8	1584	22.5	2066
OVERNIGHT	45.8	1175	50.4	1758	37.1	1637
TOTAL	163.1	8474	163.2	9966	138.9	11,348

Top Twenty Dale Programs in July 1984

Program	Description	Percent	Count
1022	Database system	22.42	19073
OPR	Operator functions	8.25	7016
EXEC	TOPS-20 command processor	5.07	4310
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General Information

The Computation Center serves the academic and administrative computing needs of the University of Chicago. We operate an IBM 3081D under MVS, two DECsystem-2060s (called Chip and Dale) under TOPS-20, and a Pyramid 90x under UNIX.

This *NEWSLETTER* was produced using SUPERWYLBUR, Xset, and XICS on the IBM 3081D computer, and printed on the Xerox 9700 printer.

Quick Reference Phone Directory

Center information: days	962-7615
Nights and weekends	962-7626

Account Information

PCA Accounts	USITE, Wieboldt 310	5-0588
Other new computer accounts and account changes		962-7158
User billing and records information		962-7158

Advice

Programming Problems	Program Advisor	962-7624
Questions about applications	USITE, Wieboldt 310	
and programs		
Suggestions,Complaints		
Program Bugs		
Refunds		
Social Science Computing Advice	Pick Advisor	962-7892
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Materials and Supplies

Computing Materials	Tape Librarians	962-7614
Sales of computer supplies	Tape Librarians	962-7614
Used Equipment	Deborah Gomben	962-7615
Tape-related services		962-7614

Microcomputers and Word Processing

Consultations with new	Information	962-7174
and prospective users	Technologies and	
Office support services	New Services	
Advice on word processors,		
micros, terminals		
New services and technology		

Center Services

Requests for new software and data files		962-7155
Programmer/Analyst services		
Customized Offline Printing Services		962-6081
Production jobs that require special	Expediting Group	962-7602
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Dataset recovery from Center backup tapes		962-7621
Data entry services		962-7604
Terminal maintenance, communications problems		962-7663

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Memoranda Subscriptions	
NEWSLETTER editor	962-6090
NEWSLETTER subscriptions	

Courses and Seminars

Questions about Center courses and seminars	Educational Coordinator	962-7173
Registration for courses and seminars which require a fee	USITE	5-0588
Registration for courses and seminars which do not require a fee		962-7153
Classroom	Harper 410	962-6014

Terminal Clusters and Equipment

Terminal Clusters	USITE Wieboldt 310
	Regenstein 201
	Abbott 602A
	Pick 123
Card Readers	USITE
Key Punches	USITE
Xerox 2700 Laser Printers	USITE, Pick

Documentation - Online and Offline

Documentation	Terminal Clusters
	USITE Business Office
	Regenstein Reserve
	Harper Reserve
	DOCLIST - pub DOCLIST
	Bookstore
NOTICE File	MVS - pub NOTICE
	Chip - NOTICE
	Dale - NOTICE

Dial-up Connections

MODEM	ON CAMPUS	OFF CAMPUS
All Systems 300 Baud	5-8880	753-0980
All Systems 1200 Baud	5-8890	753-0945
IBX DOB (all switches)		
300 baud	5-2299	
1200 baud	5-0310	
4800 baud	5-3600	
TELENET NETWORK ADDRESS		
300 baud	31236A	
1200 baud	31236	

GANDALF CLASS CODES

SYSTEM	BAUD RATE			
	300	1200	4800	TELENET
MVS	mvs3	mvs12	mvs48	mvstn
CHIP	chip3	chip12	chip48	chiptn
DALE	dale3	dale12	dale48	daletn

Computation Center Administration

Computation Center Director	
Carolyn D. Autrey-Hunley	962-7690
Assoc. Director, Operations and Technical Services	
John E. Iannantuoni	962-7616
Asst. Director, Instruction and Research Information Services	
Harold C. Bloom	962-7155
Asst. Director, Information Technologies and New Services	
George R. Bateman	962-7174
Asst. Director, Administrative Information Services	
David E. Trevvett	962-6018

Newsletter Editor
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

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University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
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City
_____

State _____ Zip _____

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COMPUTATION CENTER

NEWSLETTER

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GENERAL NEWS

The Board Of Computing Activities And Services 1984-85

The members of the Board of Computing Activities and Services for 1984-85 are:

Robert L. Graves, Chairman; Professor and Deputy Dean, Graduate School of Business

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Eugene DeSombre, Chairman, Committee on Distributed Computing, *ex officio*

Hanna H. Gray, President, *ex officio*

Ralph Muller, Associate Vice-President for Budget, Computing, and Information Systems, *ex officio*

H. Thomas Reepmeyer, Director, Administrative Systems Planning, *ex officio*

Martin Runkle, Director, University Library, *ex officio*

WYSE 132 Character Display Terminals

Distributed Computing Sites Database

SITES, a new program on the DECs, accesses an on-line catalog of computing sites on campus. Twenty sites are represented in the catalog, with information about the site itself, the facilities available and people to contact for further information. To view the information available, enter 'sites' at the TOPS-20 prompt. A question mark in response to any question will give you help in finding out what information is available at that point.

The information can either be displayed on your terminal or stored in a file to be printed later. There are several options for the way your report will be organized. If you want information about the sites, you can find information on contact persons to call, how many terminals are publicly available, whether use of the machine is restricted in any way, and what hours the facility is open.

If you are interested in a particular type of machine, you can choose to have the program report by type of CPU. You could find out what sites operate VAX machines, what languages and software packages are available on each of these machines, and what special printers or plotters may be available. Similarly, you could opt to have a report made by categories of facilities, such as I/O Devices or software; or you could look for a particular facility, such as which machines run FORTRAN.

New sites are still being added to the catalog, and information for existing sites is updated as needed. Any questions about adding a site to the catalog or changing information about a site may be directed to Kay Sandacz at 962-6089, or by DEC mail to STAFF.KAY.

— *Kay Sandacz*

If you use the public clusters on campus you will notice some new terminals occupying the carrels at USITE and at the new Crerar terminal site. Twelve WYSE-75 terminals have been purchased for USITE and six have been purchased for the Crerar site. While six of the USITE terminals are replacing Telerays, six of the new terminals will provide additional terminal access to our computers.

The WYSE-75 offers 132 character display to our users. This feature should be attractive to those who fetch output created by batch jobs. The 132 character display eliminates 'wrap-around' so one can easily interpret output without having to print a hard-copy. Hopefully, the 132 character display will help people avoid unnecessary printing costs. One can easily move from 80 to 132 character display without logging off, allowing you to use the expanded display whenever it is convenient.

The WYSE-75 has full screen capabilities. It can be used with any of our full-screen editors like SED, MUSE or EMACS. Since the WYSE-75 is a VT100 emulator, the 'SETUP VT100' command will allow DEC users to work in an optimal terminal environment. The terminals are linked to the computers at 300, 1200 or 4800 baud connections.

Terminal characteristics are set through the use of menus. You enter a SETUP mode, and then toggle through various options. Instructions will be posted near all the terminals and a manual can be borrowed from the USITE attendant in exchange for an I.D. card. Set-up procedures for the WYSE (and for all the terminals) can also be viewed on the *Introduction to Terminals* video-tape available from the USITE attendant. Don't hesitate to ask the USITE terminal attendant for help with the new terminals.

— *Ed Donner*

Computer Helps Produce Film Dictionary

How could a six-hundred item annotated bibliography be assembled from multiple sources, cross-checked for accuracy, sorted, edited, and typeset for publication with minimal staff efforts? Was there an automated procedure that required minimal learning time for computer-naive staff, spent minimal money, used minimal data storage, and relied on minimal programmer intervention? Could the procedure handle foreign language fonts and diacritics from data entry through typesetting?

Such were the questions that arose when Christopher Lyon of St. James Press, Chicago, undertook the preparation of a comprehensive reference source on "film as art," and the "principal creative figures in the history of film." From the beginning, this work was seen as a monumental archiving task with fascinating problems to be solved.

The scholarly merit of the project attracted the attention of Professor Gerald Mast (Professor, Department of English Language and Literature, the College, the Committee on General Studies in Humanities, and the Committee on Arts and Design), who served as the faculty mentor for the project.

With that faculty support, Mr. Lyons was able to present his problem to the Applications Systems group at the University of Chicago Computation Center. After exploring several alternatives, all parties agreed on a solution.

Because of the large amounts of data to be stored, work was carried out on the IBM 3081D. James Lichtenstein, Sr. Programmer/Analyst, created several procedures using Superwylbur's macro language, which simplified data entry and editing, kept the random entries in correct order, changed abbreviations to whole words, and translated the text for a Compedit Varityper 5801 typesetting machine.

Of particular interest is the fact that many of the source materials were available in the Regenstein Library. Because there is also a terminal cluster in Regenstein, Mr. Lyon was able to work directly from the library. He didn't have to take over 3000 books from the library, but could take an armful of books to the terminal, find the needed information, and enter it onto a disk file on the IBM 3081D.

Entering data directly from reference materials rather than from notes removed one source of error. Since the information was keyed only once, transcription errors were also reduced. Altogether, the procedures were credited with a seventy-five percent reduction in the expected error rate.

Discussions began in the summer of 1982, and the programming was completed in time to allow data entry to begin in September 1982. The last entry was made in February 1984, although text was corrected and edited up to the time of final publication. In June 1984, *The International Dictionary of Films and Filmmakers* was published. Volume I describes films, and Volume II considers directors and filmmakers. Volume III, which focuses on actors and actresses is expected to be completed in January 1985. Work on Volume IV, writers and production artists, has not yet begun.

— *Ernie Froemel*

Availability for SPSS-X and IDA to be Limited

Over the years, the Computation Center has attempted to provide a wide variety of software on each of its various computers. However, in some instances,the expenses involved in duplicating software on several machines can no longer be justified. We realize that this will inconvenience some users, and we hope they will understand the reasons for this decision.

We now have to pay annual maintenance fees, per computer, for most of the products from SPSS Inc.. We will, therefore, be reducing the number of copies of their products where usage patterns allow.

On January 1, 1985, we will take the following actions:

- IDA will be removed from MVS/TSO.
- IDA will be removed from one DEC-20 (Chip).
- SPSS-X will be removed from one DEC-20 (Chip).

The availability of SPSS Inc. products on Computation Center computers will then be as follows:

Program	Computer
IDA	Dale
SCSS	MVS/TSO, Chip, Dale
SPSS-X	MVS/TSO, Dale
SPSS V9	MVS/TSO, Chip, Dale

Please note that SPSS version 9 is no longer supported by SPSS, Inc. It will be removed from all computers at the end of the winter quarter, sometime after March 23, 1985. We urge people to convert their applications from SPSS V9 to SPSS-X before that time.

If you are currently using these products on computers from which they will be removed, you may contact either the program advisor or social science advisor for assistance in moving your files to a computer where the program will continue to reside.

Speakeasy to be Removed

Speakeasy, which operates under MVS/TSO, will be removed from the IBM 3081D on January 1, 1985. Usage of this program has declined signifi-

cantly over the past year. It is no longer possible for the Computation Center to justify the expenses for leasing and maintaining Speakeasy.

We regret any inconveniences that this may cause.

Hungry? Vend for yourself at USITE

Vending machines are being installed in the canteen area at USITE. Soda pop, candy, and chips will be available around the clock for our users. Coffee machines are not yet available. ARA requires a demand of 40-50 cups a day. Since summers and interims tend to be slow at USITE, coffee machines will probably not be installed for some time. The Library doesn't allow food or drink in its areas, and the Computation Center doesn't allow either at its terminals. If the machines are to remain at USITE, these rules must be followed.

— *Ed Donner*

Developments in Electronic Mail

Many of you are familiar with the electronic mail system, MM, that is available on our DECsystem-20 computers. You may use it to keep in touch with your colleagues scattered across the campus. Did you know, however, that you can use electronic mail to keep in touch with your colleagues scattered across the globe?

The systems which allow you to send electronic mail and transfer files to off-campus locations include MAILNET, BITNET, and UUCP. In this article we will recap information about MAILNET and pro-

vide some discussion of BITNET and UUCP.

Before we discuss the specifics of each system, we should mention a brief word about which system you should use. Ordinarily, deciding which kind of software to use for a given computer task is difficult, involving many variables and options. With electronic mail, however, the decision is not nearly so difficult.

In general, if you are primarily a Superwylbur or TSO user, you'll want to use BITNET directly from those systems. If you do most of your work on the DEC-20s, MAILNET is simply accessed though MM. Finally, the UUCP facility is available on the DEC-20s and the Pyramid 90x and is of primary interest to those who want to send files to other Unix installations.

Description of MAILNET on the DEC-20s

MAILNET has the longest history of these systems at the Computation Center, available since December of 1983. MAILNET, provided by EDUCOM, links computer sites at various educational institutions across the U.S. and in Europe. Currently, in addition to the University of Chicago, the following institutions are MAILNET sites: Dickinson College, University of Durham (U.K.), EDUCOM, Grinnell College, Iowa State University, Massachusetts Institute of Technology, University of Michigan, New Jersey Institute of Technology, University of Newcastle-upon-Tyne (U.K.), Northwestern University, Rensselaer Polytechnic Institute, Stanford University, and Stockholm University QZ Computing Center.

This list of MAILNET sites and addresses can be displayed at your terminal screen when logged onto one of the DECSystem-20s, with the command:

@TYPE NOTES:MAILNET

This file also contains information on how to access MAILNET using MM. Further information on MAILNET can also be found in the December, 1983; February, 1984; and March, 1984 issues of the *Newsletter*. In addition, the Center is currently developing a memo describing MAILNET usage.

Description of BITNET on the IBM 3081D

BITNET is another inter-university network for sending electronic mail, messages, and data files. Computer users at BITNET member institutions may use any of its facilities. In addition to the member computer sites that are part of BITNET, there are a number of other computer networks connected to it, including MAILNET, ARPANET, USENET, CSNET, and IBM-VNET. For purposes of this article we will confine ourselves to BITNET alone.

BITNET can be accessed through a Superwylbur macro (PUB BITNET) or through a TSO command (BITNET). Each of these methods will be described. Before we discuss BITNET access, however, let's discuss several introductory terms and concepts.

BITNET: Terms and Concepts

NODEs -- Each computer system connected to the network is called a node or domain and is identified by a unique identifier, called a node-name. The University of Chicago is known by the node name UCHIMVS1.

PERSON-IDs -- Each person using the network is identified by a person-id, user-id or user-name. It is a string of characters which identifies the person uniquely among all the users at <u>one</u> particular node (ie. on one particular computer system).

ADDRESSes -- When material is sent, each addressee is identified by a person-id and node-name, making a unique network address, such as,

person@node

MAIL HEADERs -- The mail messages are preceeded by mail headers created by the network interfaces described below. This header contains the date and time of sending, the recipients' addresses, the sender's return address, and an optional title.

Mail from other institutions should be addressed to your logon-id at UCHIMVS1 to receive it on the IBM 3081D. The correct form is:

mvs-logonid@UCHIMVS1

BITNET Gateways

In addition to sending BITNET mail directly to an individual at a participating BITNET institution, you may also address material to users of other networks if a "gateway" exists between the two networks. A gateway is some computer facility on both networks, which has agreed to transfer material between them.

In general, material for other networks which are known to our computer systems can be addressed with the network name appended to the node name:

person-id@node.network-name

e.g. JOHN.DAW@GRINNELL.MAILNET is the BITNET mail address for person-id, JOHN.DAW, at the GRINNELL node on the MAILNET network.

For networks whose gateways are not yet known to our systems, but whose address is known to you (often by reading the return address on mail you received), you can specify the full address:

name%node.network-name@gatenode

For example,

ROBERT%UBCG-MTS@UMICH-MTS.MAILNET
is the BITNET address for person-id, ROBERT, who resides on the UBCG-MTS node. The message is being sent through the UMICH-MTS node on MAILNET.

Accessing BITNET through TSO

From TSO, you can send and receive mail files, one-line messages, special messages and (using your own JCL) data files over the BITNET network.

To send mail over BITNET, use the BITNET command with appropriate parameters. If no parameters are given, you will be prompted for all necessary information. Once on TSO, the command is:

BITNET or
BITNET mailfile parameters

where: "mailfile" = the name of your mail text file, a catalogued TSO dataset name

"parameters" = any of the following
      USERID(person-id of addressee)
      NODE(node name of addressee)
      GROUP(address-list dataset name)
      SUBJECT("subject title")

At present, the only charge for using BITNET is the cost of a job which copies your mail file.

Incoming mail will be copied into your fetched-job queue. The name of the job will always be "NETMAIL." If you are logged onto the IBM computer at the time the mail arrives, you will receive a message on your terminal that you have network mail.

The TSO IOF facility will display NETMAIL jobs and allow you to examine incoming mail. Using SNAP, a subcommand of IOF, the job may be placed into an IBM dataset (defined by the SD subcommand). The job must then be removed from the system with the CANCEL subcommand.

Accessing BITNET through Superwylbur

From Superwylbur, you can send and receive mail files and (using your own JCL) data files over the BITNET network.

To send mail over BITNET, invoke the BITNET macro with appropriate parameters. If no parameters are given, you will be prompted for all necessary information. The Superwylbur command is:

PUB BITNET or
PUB BITNET mail target parameters

where: "mail" = the text of your mail, in the form of a Superwylbur range of line numbers, or a file name and disk volume

e.g. 1/50 (from your current working file)
or ALL FROM NOTICE.SEPT ON PUB002

"target" = either one address or a group-name

an address is a person-id & node-name,
separated by "@"

e.g. GEORGEM@HARVARD

a group-name is a file designation
preceeded by an "@"

e.g. @MYLIST.NOTICES
or @MYLIST%NOTICES (for one group
in a group-library)

"parameters" = any of the following
GROUP = address-list-name
NAMEFILE = name-file-name
SUBJECT = "subject title"
TERSE (to reduce the volume of prompting)

Incoming mail will be copied into your fetched-job queue. The name of the job will always be "NETMAIL." If you are logged onto the IBM computer at the time the mail arrives, you will receive a message on your terminal that you have network mail.

The SHOW JOBS command will provide the job-numbers of NETMAIL jobs. The FETCH command will bring one of them into your working file. After the job is fetched, you must use the PURGE command to remove it from the system.

If you want a printed version of the NETMAIL, you must issue a LIST OFFLINE command; releasing the job with a PRINT command will merely result in the eventual loss of all output.

UUCP on the Pyramid 90x

In addition to MAILNET and BITNET, there is yet another way to send electronic mail and messages from the University to off-campus locations. UUCP,

the Unix-to-Unix-Copy-Program, allows you to transfer files (including mail) to other Unix installations on this campus and others. UUCP is not a networking system like MAILNET or BITNET, but is a direct dial-out communications system primarily used on computers running the Unix operating system.

UUCP is described in the new manual, *The Unix System on the Pyramid 90x*. There is also an article on page 17 of this *Newsletter* which describes UUCP. So, we will not duplicate that information here. UUCP will be primarily of interest to those users of the Sphinx computer who want to transfer files and mail to colleagues off-campus who are themselves using Unix systems.

Documentation and Training

A complete user's guide to BITNET (including how to access other connected networks) is currently being written by the Center. That guide will include the addresses of the more than 300 BITNET member institutions. In addition to the BITNET guide, the MAILNET memo and and Pyramid Unix memo are being written. The Center is also developing a seminar on electronic mail and its applications which will be taught during Winter Quarter 1985.

Conclusions

The Center is fully - involved in developing and providing on-campus and off-campus electronic mail and file transfer software for its users. The benefits of this kind of convenient and cost-effective capability are well-known to those who have already used MAILNET to communicate to colleagues at other institutions. Now that BITNET and UUCP are being added to the existing service, a much larger number of institutions around the globe will be electronically linked to the University. This will make the sharing of ideas, data, and information with others outside the world of Hyde Park that much easier.

— Don Crabb

Computation Center Curriculum Guide Available

Since the beginning of autumn quarter the Center has been distributing a complete guide describing all the classes, live and videotaped, that we provide to aid you in learning to use the computer services that we offer. This *Computation Center Seminar and Course Curriculum Guide 1984-1985* is available free of charge at various locations on campus, including the Staff Office Building at 5737 South University Avenue (from 8:30 to 5:00, Monday - Friday), the Main Business Office at 1313 East 60th Street, room 164, (from 8:30 to 4:30, Monday - Friday), and at Usite, Wieboldt 310 (from the terminal attendant on a 24-hour-a-day basis, every day that Usite is open).

You should consult the *Curriculum Guide* before choosing which classes to attend and which videotapes to watch for the computer use that you have in mind. Schedules of the live classes described in the *Guide* are published each quarter and are available in the locations listed above.

Anyone wishing further information should contact the Center's Educational Coordinator, Don Crabb, at 962-7173 (or via DEC-20 MM to STAFF.DONCRABB).

          — *Don Crabb*

Class Schedule for November 1984

The Computation Center is continuing to offer, during November, a number of non-credit courses and seminars which are open to the general University community. A schedule of the classes available for this month follows. For a complete description of these classes please consult the *Computation Center Seminar and Course Curriculum Guide 1984-1985.* The *Curriculum Guide* also gives you recommended class sequences to take for different subject areas and lets you plan the Center's classes you want to take during the year.

Each seminar and course has an identification number associated with it in order to simplify course selection and registration. Each seminar and course also may have prerequisite classes listed for it. The prerequisite classes, or equivalent knowledge of the material that they cover, are essential to understanding the topics covered in the classes dependent on them. Class instructors work from the assumption that you will have attended the appropriate prerequisite classes or already understand the subjects discussed in those classes. To make effective use of the classes that the Center provides, you need to take classes in the sequences suggested in the *Curriculum Guide.*

In addition to the quarterly seminars and courses taught in a classroom setting, the Center also provides videotaped training sessions. More information on video computer classes can be found in the article on page 11 of this *Newsletter.*

Registration is required for all courses. Some seminars also require registration. Although seminars are free of charge, there is a fee for many courses. It may be paid in cash, charged to a Computation Center billable project (Student and Faculty Personal Computing Accounts, PCAs, are not billable projects), or paid with a University 62 form. A refund will be made if the registrant requests one before the start of the second session of the course in question. All seminars and courses which fail to meet minimum enrollments listed are subject to cancellation. Registrants will be notified if a class is cancelled.

Those interested in registering for courses may do so in person at the Computation Center USITE Business Office, in Wieboldt 310, from 9:00 a.m. to 4:00 p.m., Monday through Friday. Seminar registration is handled differently. Consult the class schedule listings below for information. Anyone wishing further information concerning the topics and content of these seminars and courses should examine the Curriculum Guide or contact the Center's Educational Coordinator, Don Crabb, at 962-7173 (or via DEC-20 MM to STAFF.DONCRABB).

November 1984 Seminars

CC130 - INTRODUCTION TO MAGNETIC TAPE STORAGE
Location: Harper 406
Date and Time: Friday, November 2, 1:00-2:30
Prerequisites: CC100, CC110, CC200, CC210, or equivalent knowledge
Instructor: Judy Curry

CC210 - INTRODUCTION TO THE DECSYSTEM-20s (Two Parts)
Location: Harper 406
Date and Time: Tuesday and Thursday, October 30 and November 1, 4:00-5:30
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Chris Delmar

CC220 - INTRODUCTION TO THE PYRAMID/UNIX SYSTEM (Two Parts)
Location: Harper 406
Date and Time: Monday and Wednesday, November 12 and 14, 10:30-12:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Pete Davis

CC430 - TEXT PROCESSING IN THE IBM ENVIRONMENT (TREATISE, SCRIPT) (Two Parts)
Location: Harper 406
PLEASE NOTE THE DATE CORRECTION:The second part of this seminar meets on Friday, November 2, 1984; not on November 1 as stated in the Sep-

tember 15 Newsletter.
Date and Time: Wednesday and Friday, October 31 and November 2, 3:30-5:00
Prerequisites: CC100, CC410, or equivalent knowledge
Instructor: Ed Donner

CC240 - OVERVIEW OF THE ACF2 DATASET SECURITY SYSTEM UNDER MVS
Location: Harper 406
Date and Time: Thursday, November 1, 1:00-2:30
Registration is required for this seminar. Register by calling Yvonne McNear at 962-7153.
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC230, or equivalent knowledge
Instructor: Ernie Froemel

CC300 - INTRODUCTION TO MICROCOMPUTING (Three Parts)
Location: Harper 406
Dates and Times: Monday, Wednesday, Friday, November 5, 7, 9, 3:30-5:00
Prerequisites: none
Instructors: Martha Ash and Don Crabb

CC440 - EMACS FULL SCREEN EDITING ON THE DECSYSTEM-20s AND PYRAMID/UNIX
Location: Harper 406
Date and Time: Monday, November 5, 1:00-2:30
Prerequisites: CC210 and CC220, or equivalent knowledge
Instructor: Al Schultz

CC460 - INTRODUCTION TO MUSE WORD PROCESSING ON THE DECSYSTEM-20s (Three Parts)
Location: Harper 406
Dates and Times: Monday, Wednesday, Friday, November 5, 7, 9, 10:30-12:00
Prerequisites: CC210, or equivalent knowledge
Instructor: Arlene Brown

CC470 - TYPESETTING EMULATION WITH XSET

Location: Harper 406
Date and Time: Tuesday, November 6,
　　　4:00-5:30
Prerequisites: CC400, CC200, CC410, or
　　　equivalent knowledge
Instructor: Joan McGrane

**CC480 - USING THE GENERALIZED MARKUP
LANGUAGE (GML) FOR TEXT FORMAT-
TING IN THE IBM ENVIRONMENT**
Location: Harper 406
Date and Time: Thursday, November 8,
　　　4:00-5:30
Prerequisites: CC400, CC200, or equivalent
　　　knowledge
Instructor: Ed Donner

**CC420 - INTRODUCTION TO THE EDIT LINE
EDITOR AND THE RUNOFF TEXT FOR-
MATTER ON THE DECSYSTEM-20s**
Location: Harper 406
Date and Time: Tuesday, November 13,
　　　4:00-5:30
Prerequisites: CC210, CC400 or equivalent
　　　knowledge
Instructor: Chuck Hodge

**CC600 - INTRODUCTION TO TELL-A-GRAF
AND THE DATA CONNECTION ON TSO
AND ON THE DECSYSTEM-20s**
Location: Harper 406
Date and Time: Tuesday and Thursday,
　　　November 13 and 15, 1:00-2:30
Prerequisites: CC200, CC210, or equivalent
　　　knowledge
Instructor: Dorothy Raden

**CC310 - MICROCOMPUTER DATA COMMUNI-
CATIONS**
Location: Harper 406
Date and Time: Thursday, November 15,
　　　3:30-5:00
Prerequisites: CC100 and CC300, or equiv-
　　　alent knowledge
Instructors: Don Crabb and Martha Ash

**CC610 - INTRODUCTION TO CUECHART ON
THE DECSYSTEM-20s (Workshop)**
Location: Harper 406
Date and Time: Friday, November 16,
　　　3:30-5:00

Prerequisites: CC210 and CC600, or equiv-
　　　alent knowledge
Instructor: Joyce Weil

**CC630 - INTRODUCTION TO SAS/GRAPH (2
Parts)**
Location: Harper 406
Date and Time: Tuesday and Thursday,
　　　November 27 and 29, 1:00-2:30
Prerequisites: CC200 and CC530, or equiv-
　　　alent knowledge
Instructor: Jim Lichtenstein

November 1984 Courses

**CC810 - INTRODUCTION TO FORTRAN PRO-
GRAMMING ON THE DECSYSTEM-20s
(Eight Parts)**

Registration is required for this course.
Register at the USITE business office for
this course.

Mondays and Wednesdays, October 29 -
　　　November 21, 5:30-7:00
Location: Harper 406
Cost: $40.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC210, CC420, CC800, or
　　　equivalent knowledge
Instructor: Kay Sandacz

CC530 - INTRODUCTION TO SAS (Six Parts)

Registration is required for this course.
Register at the USITE business office for
this course.

Tuesdays and Thursdays, October 30 - No-
　　　vember 15, 6:00-7:30
Location: Harper 406
Cost: $30.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC200, or equivalent knowl-
　　　edge
Instructor: John Raz

Video Classes at USITE

The Computation Center produces non-credit, introductory and intermediate-level videotaped computer classes for use by the university community. The courses cover a variety of computing topics. Two kinds of taped classes can be viewed at Usite: videotaped versions of the live classes we teach each quarter and sessions especially designed and produced for the video medium. All of these videotaped classes are described fully in our *Computation Center Seminar and Course Curriculum Guide 1984-1985*.

The videotaped versions of live classes supplement our quarterly teaching schedule with video materials available on a 24 hour-a-day basis, so that if you miss the live seminar you don't have to wait another quarter until it's offered again. The task-oriented videos are edited and narrated, and therefore cover topics in a more succinct manner.

All of the videos, with supporting written handouts, are available at no charge for use at the Self-Instructional Facility in USITE. To use an available video, contact the USITE terminal attendant who will supply you with the tape and materials and open the facility for your use, in exchange for your UC ID. The attendant can also provide you with information on how to use the VCR to play the tapes. This library of tapes will be supplemented and modified as new tapes are produced. For more information about this program take a look at the *Curriculum Guide* or you may discuss the videos currently available or those to be produced in the future with the Center's Educational Coordinator, Don Crabb, at 962-7173 or via DEC-20 MM to STAFF.DONCRABB.

Videotaped live classes currently available:

COMPUTER CONCEPTS AND TERMINOLOGY
    One Videotape (90 minutes)
    Instructor: Don Crabb

COMPUTATION CENTER FACILITIES AND SOFT-
    WARE One Videotape (90 minutes)
    Instructor: Don Crabb

FUNDAMENTALS OF COMPUTING Three Video-
    tapes (90 minutes each)
    Instructor: Don Crabb

INTRODUCTION TO MICROCOMPUTING AT THE
    UNIVERSITY OF CHICAGO Three Video-
    tapes (90 minutes each)
    Instructors: Martha Ash and Don Crabb
OVERVIEW OF TEXT PROCESSING AT THE UNI-
    VERSITY OF CHICAGO One Videotape (90
    minutes)
    Instructor: Don Goldhamer

INTRODUCTION TO NCPCALC ON THE
    DECSYSTEM-20's One Videotape (60 min-
    utes)
    Instructor: Martha Ash

INTRODUCTION TO SUPERWYLBUR One Video-
    tape (90 minutes)
    Instructor: Vivian Nix

INTRODUCTION TO THE DECSYSTEM-20 One
    Videotape (90 minutes)
    Instructor: Ernie Froemel

TEXT PROCESSING IN THE IBM ENVIRONMENT
    (TREATISE, GML) Three Videotapes (90
    minutes each)
    Instructor: Ed Donner

MACINTOSH SOFTWARE DEVELOPMENT One
    Videotape (90 Minutes)
    Instructor:Apple Regional Representative

Task-Oriented Video Sessions:

INTRODUCTION TO COMPUTING AT USITE One
    Videotape (20 minutes)
    Narrator: Don Crabb

INTRODUCTION TO TERMINALS AT USITE One
    Videotape (15 minutes)
    Narrator: Don Crabb

USING THE SED FULL SCREEN EDITOR ON THE
    DECSYSTEM-20's One Videotape (30 min-
    utes)
    Instructor: Martha Ash. Narrator: Don Crabb

Lectures in Computer Science

The Department of Computer Science of the University of Chicago has announced the following Colloquium Speaker for November. You may obtain further information at the Departmental Office, Ryerson 152.

Andrew Odlyzko, AT&T Bell Labs, New Jersey
Cryptography and Computational Complexity of Algorithms

Monday, November 12, 2:30 PM, Ryerson 276
Wednesday, November 14, 2:30 PM, Ryerson 276
Friday, November 16, 2:30 PM, Ryerson 276

DATA RESOURCES

— *Melissa Trevvett*

U. S. Bureau of the Census

Several 1980 Census products are available for microcomputers. The U.S. Bureau of the Census released the *1983 County and City Data Book* (CCDB) last spring on diskettes for the IBM/PC and compatible microcomputers. The CCDB includes data for the nation, 50 states, the District of Columbia, 3,137 counties or county equivalents, 957 cities with 25,000 or more inhabitants, and 7,749 places with 2,500 or more inhabitants. The Census Bureau is releasing the diskettes as three main files; the County File Set(22 diskettes), the City File Set(7 diskettes), and the Place File Set(6 diskettes). In addition, it offers one diskette providing national and state totals and one software documentation diskette which describes all the files. The diskettes are available for purchase either singly or as a set, directly from the Census Bureau only. A single diskette or the first diskette of a set costs $60; each subsequent diskette costs $12.

The *City and County Data Book* is available also, on tape. The tape may be ordered from the Inter-University Consortium for Political and Social Research, through John Raz at Pick 123, 962-7892. The printed version is available at Regenstein Library Reference.

The Census Bureau will be making additional products available on diskettes. It is issuing the *1981 County Business Patterns* data now, and will soon issue files of two *1982 Population Estimates Series*. One set of the 1982 files will include per capita income estimates for 1981.

For more information call Melissa Trevvett, Data Resources Coordinator at 962-6092.

Data on Latin America

There are over thirty studies which either focus on Latin America or include data from Latin American countries available through the Inter-university Consortium for Social and Political Research.

Faculty and students interested in machine-readable data on Latin America can request a printout of the files on that region. For a list of these studies call Melissa Trevvett, Data Resources Coordinator at 962-6092.

General Social Survey

The Computation Center has added 1984 data to the *General Social Survey* cumulative files. This is the most recent data available. Data from 1972-1984 are available in three files.

On the IBM, two files are available on tape T95715. File number five, named SPSS.GSS7284 is an SPSS system file. File number six is called SPSSX-GSS7284, and is an SPSS-X system file. On the DEC, the file called DATA:GSSALL.DAT is an SCSS master file. Note that since this incorporates data from 1972 to 1983, the previous master file, called DATA:GSSMST.DAT has been removed.

MVS

Formatting a Resume with Xset

The Computation Center has recently installed a typesetter emulation program for the Xerox 9700 printers, called Xset. The Xset program formats documents using fonts of differing sizes and types, mono-and proportional-sized fonts, and variable line leading, and different font types.

The major benefit derived from using Xset is that the user has considerable control over the appearance of the printed page.

The following exhibit is an example of the input to, and the output from, Xset. It shows the resume for a fictional person. The environment shown here is 1-column newsletter format with the Helvetica font. This is the enviroment for the entire *Newsletter*. To use the Times Roman font, and to increase the margins to one inch, replace the < NEWS/1COL/HLV3 > with < ARTL/TRM3 > in the first line of the file shown below.

The Xset primer may be obtained by logging on to Superwylbur and typing PUB XSETMAN. That document is composed using Xset and explains all the commands shown in this example.

— Myra Squires

Input commands to Xset

```
< NEWS/1COL/HLV3 >
< BD/CC/12PT > Mary E. Doe
< NL > 19 Purple Rain Drive
< NL > Prince City, Illinois 60699
< NL > (312) 555-1234
< BL >
< BL >
< BD/CP/NL > Work Objective:   Accountant
< BL >
< JTXT/NL/IT/10PT > Experience < T,3/RO > Millbank Furniture Company, Grand
Rapids, Michigan < T0 >
< LT/JTXT > 1970-1979 < NL/BD/RO > < T,3 > Statistical Specialist - < LT >
```

Prepared detailed financial records including status reports, current
and historical reports. Prepared journal entries, maintained records for
marketing expenditures and inventories. Processed warehouse invoices.<T0>
<BL>
<JTXT/NL>1967-1970<T,3/BD>Accounts Receivable Analysis Clerk - <LT>
Made nonstandardized journal entries, coded invoices for proper accounting
routine. Analyzed details of regular accounts. Assisted and trained other
accounting clerks.<T0>
<BL>
<JTXT/NL>1965-1967<T,3/BD>Walker Lumber Company, Inc., Grand Rapids,
Michigan<BL>
<NL>Cash Accounting Clerk - <LT>Performed various routine and
non-routine bookkeeping and basic accounting tasks including journal
entries, verifying data and reconciling discrepancies, preparing detailed
reports from raw data, and checking accounting documents for completeness,
mathematical accuracy and consistency.<T0>
<BL>
<JTXT/NL>1962-1965<T,3/BD>Accounting Clerk Trainee - <LT>Operated
electronic calculator to make and verify computations. Prepared journal
vouchers, entered postings, and filled in standard records and reports.
Acquired a working knowledge of such accounting office procedures as posting
and balancing, compiling data, preparing summaries, and verifying routine
reports by checking against related details and previous data to reconcile
irregularities.<T0>
<BL>
<NL/BD/JTXT/IT>Education<T,3/RO> Community College - <LT>Currently
enrolled in a statistics course and completed a two-semester course in
mathematics.
<BL>
<BD/NL>Lakewood Business School - <LT>
Completed courses in basic accounting
 principles, intermediate accounting,1963.
<BL>
<BD/NL>Ramsey High School - <LT>Graduated with business studies
credentials,1960.<T0>
<BL>
<BL>
<CP/BD/NL/IT>References furnished upon request.

The output follows on the next page

<div align="center">

Mary E. Doe
19 Purple Rain Drive
Prince City, Illinois 60699
(312) 555-1234

Work Objective: Accountant

</div>

Experience
1970-1979

Millbank Furniture Company, Grand Rapids, Michigan

Statistical Specialist - Prepared detailed financial records including status reports, current and historical reports. Prepared journal entries, maintained records for marketing expenditures and inventories. Processed warehouse invoices.

1967-1970

Accounts Receivable Analysis Clerk - Made nonstandardized journal entries, coded invoices for proper accounting routine. Analyzed details of regular accounts. Assisted and trained other accounting clerks.

1965-1967

Walker Lumber Company, Inc., Grand Rapids, Michigan

Cash Accounting Clerk - Performed various routine and non-routine bookkeeping and basic accounting tasks including journal entries, verifying data and reconciling discrepancies, preparing detailed reports from raw data, and checking accounting documents for completeness, mathematical accuracy and consistency.

1962-1965

Accounting Clerk Trainee - Operated electronic calculator to make and verify computations. Prepared journal vouchers, entered postings, and filled in standard records and reports. Acquired a working knowledge of such accounting office procedures as posting and balancing, compiling data, preparing summaries, and verifying routine reports by checking against related details and previous data to reconcile irregularities.

Education

Community College - Currently enrolled in a statistics course and completed a two-semester course in mathematics.

Lakewood Business School - Completed courses in basic accounting principles, intermediate accounting,1963.

Ramsey High School - Graduated with business studies credentials,1960.

<div align="center">

References furnished upon request.

</div>

TOPS-20

UUCP Transfers Files for the Pyramid

UUCP is a file transfer program that can be used to transfer data to or from the Pyramid. UUCP stands for Unix-to-Unix-Copy-Program, but it can be used to send files to or from the Center's DEC-20's as well as various campus computers that have Unix operating systems.

The format of the UNIX UUCP command (cf. man uucp on the Pyramid) is:

uucp filename destination

Destination includes information on which system and what directory the file is going to. For example, a file, FAT.DAT, can be sent to the Computation Center's DEC-20 Chip with the following type of command:

%uucp FAT.DAT chip\!/L1.lipid/

The user's directory name on Chip is preceded by "!" The backslash is necessary to have UNIX ignore special meanings for "!" in other contexts. The outcome of the file transfer may be learned via the uulog command. E.g.,

%uulog -u user-name

On Chip the uufetch command will let you see if the transferred file is in the holding directory, and if so, allow you to tranfer the file to your own directory.

Use: @UUFETCH -L

to see if there is anything for you in the holding directory.

@UUFETCH filename

or

@UUFETCH *.*

will transfer files to your Chip directory.

If the transfer doesn't work immediately, it may be that others are sending large files. Check uulog; if the request has not failed, allow some additional time before calling the advisor.

Sending Files to the Pyramid

Files sent to the Pyramid must have a valid place to go. A directory with write and execute privileges for "others" is an allowable destination.

(cf. chmod command to change default file/directory permissions)

The Chip command

@UUCP ODAT.DAT SPHINX!/U1/XEDO/Umail/

would send the file ODAT.DAT to XEDO's unprotected Umail directory.

A list of valid computer destinations to which files may be sent is displayed via the uuname command. At the present time these are:

sphinx	Pyramid 90x at Computation Center
gargoyle	VAX 11/750 at Computer Science
chip	DEC-20 at Computation Center
dale	DEC-20 at Computation Center
puck	LMC at Humanities Pilot Project
oddjob	VAX 11/780 at Astrophysics

Not all these destinations are available on all machines. Use the uuname command to list those available to the computer you are using.

— Dru Allin

MUSE 4.1.7 Installed

MUSE version 4.1.7 was installed the week of October 8. This version of MUSE corrects most of the known problems with printing mail/merge documents. Furthermore, it is this version that allows files to be transferred to and from microcomputers using the MUDUMP program. All files are compatible. That is, a document edited on one machine may be edited on the other.

A notable change is found in the number of lines allowed for headers and trailers. Text is now dynamically allocated among headers, trailers and text. There is no longer a five-line length or an eighty-character width limitation on header and trailer text.

With this version of MUSE, the function keys for delete, bold, underscore, and alternate font are enabled during an insert operation. However, you still cannot copy or move while inserting text.

The DEC-20 Notice file entries MUSE6 and MUSE7 present further information about this new version of MUSE.

PYRAMID/UNIX

Charges for Using the Pyramid Are Set

Rates for services on the Pyramid 90x have been set. Up-to-date information on what the rates are can be found on-line on the Pyramid. The command,

> %man rates

will display the latest information. The rates have also been incorporated in Memorandum 4170, which states the prices for all computing services for academic users.

The current costs are:

Description	Shift	Rate
Connect Time	1 and 2	$2.30 /hour
	3	$0.35 /hour
Tape Usage	all	$0.243 /drive-minute
Printed Output	all	$0.10 /page
Disk Page Day	all	$0.0015 /block(2048bytes)
CPU	1 and 2	$1.00 /cpu minute
	3	$0.25 /cpu minute
Connect Dialout	1 and 2	$2.30 /hour
	3	$0.35 /hour

Shift 1 is prime time during weekdays, 8 am to 6 pm. Shift 2 is evening time, from 6 pm to 11 pm. The early morning hours, 11 pm - 8 am. comprise shift 3.

S: An Integrated Statistical/Graphics System on the Pyramid

S, from Bell Laboratories, is an integrated, interactive system for data analysis and graphics. S is FORTRAN-based, and is designed to run on UNIX systems. It is available now on the Pyramid.

Some of the features of S that make it exciting to work with are:

- Data management and data structuring capabilities are built-in. Data is readily accessible and easy to work with.

- The system is interactive; results are obtained immediately.

- Powerful analytical techniques, including exploratory data analysis, (EDA), robust methods, univariate and multivariate statistical procedures are available.

- The system is user-extendable. It is easy to include new algorithms, new graphics devices, new data structures.

- The interactive graphics system includes a large and extensible choice of plots.

The UNIX on-line command,

%man S

will provide very succinct information on using S.

S has extensive on-line help files, and users will be able to print crucial on-line manual pages on the Talaris printer. A paperback manual, *S, An Interactive Environment for Data Analysis and Graphics* by R.A. Becker and J.M. Chambers will be available for viewing at Regenstein, Harper, and Crerar Reserve Reading Rooms, and at the Center's terminal clusters. The book will be available for purchase at the University Bookstore, 950 E. 58th Street.

Graphs produced with S may be displayed on any printing terminal, on the Hewlett-Packard graphics terminals at USITE, or many other types of graphics devices that may be privately available. High-quality, color graphics are supported by S. Within S, the command,

help ("devices")

would provide a list of supported devices, mostly Hewlett-Packard and Tektronix products.

The command,

help ("hp7221")

would display specific information on using the HP7221 pen plotter.

— Dru Allin

MICROCOMPUTING

Fat Mac Available

On September 11th, Apple announced a second model of Macintosh, the 512K Mac or "Fat Mac." The 512K Mac is identical to the 128K Mac (the original Macintosh) in all respects other than memory, 512KB vs. 128KB of RAM, and price, $1980 vs. $1160, respectively. MacWrite and MacPaint are included with both versions of Macintosh.

Apple is not abandoning the 128K Mac. There are now approximately 120 software packages for the 128K Mac with more being developed. Apple anticipates that 60 to 70 percent of their Macintosh sales will be 128K Macs.

A 128K Mac can be upgraded to a 512K Mac by installing a replacement logic board which has the 512KB of memory. Replacement boards should be available in very limited quantity in November. The initial shipment of 512K boards will be used to upgrade systems for university pilot projects and developments. After November 15, a statement of procedures for the upgrade and a new price list will be available at the Microcomputer Distribution Center (1307 E. 60th Street), USITE (Wieboldt 310), or the Staff Office Building (5737 S. University).

The November issue of *MacWorld*, available at most bookstores, has a feature article on the 512K Mac which is interesting and informative. Unfortunately, the upgraded version of MacPaint and MacWrite which is discussed in the article is not yet available to us.

Apple Orders

Through our participation in the Apple University Consortium, all University departments and full-time faculty, staff, and students are eligible to purchase most Apple equipment at a reduced price. Price lists and order forms are available at our **Micro-Computer Distribution Center (1307 E. 60th Street)**, USITE (Wieboldt 310), and the Staff Offices (5737 S. University).

Orders must be placed at our Microcomputer Distribution Center which is open Monday-Friday from 10:00 a.m. to 4:00 p.m. (phone 962-3452). **Orders are no longer taken at our Staff Office Building.** Macintosh products in stock, and ready for your immediate use, include: 128K Macs, Fat Macs, disk drives, modems, carrying cases, MacWrite, MacPaint, MacTerminal. Limited quantities of printers and keypads are available. MacPascal and the 512K upgrade boards are not yet available from Apple. Security kits and keypads are in very short supply.

New Hardware And Software in the Lab

The Demonstration and Development Lab located at 5737 S. University has added more software and hardware. Call Cathy Kosto at 962-7151 for an appointment with lab personnel.

This month, the lab has added, and is ready to demonstrate, the following:

512K Macintosh, Apple Computer, Inc., - random access memory has been expanded. **DB Master 1.0,** Stoneware Corp., - a data base management program for the Apple Macintosh.

Mac/Daisy Wheel Connection(Demo Version), Assimilation Process Co., - a driver for letter quality printers on the Apple Macintosh.

Smoothtalker (Demo Version), First Byte Co., - a speech synthesizer for the Apple Macintosh.

MacTerminal 1.1, Apple Computer, Inc., - VT100, VT52, TTY, 3278 terminal emulator for the Macintosh.

Systat, Systat Co., - a statistical program for the Kaypro and the IBM PC.

User Group News

Macintosh Users Group

The Macintosh Users Group meets the third Thursday of each month. The next meeting will be November 15 at 4:30 p.m. in Eckhart 133. The October 15 meeting was very well attended, and larger quarters are being considered. The Apple User's Group has joined with the Macintosh group.

Users are encouraged to attend and to participate. If you are unable to attend the meeting you may contact Drucilla Shifman at 955-1954, for more information.

SKYP-Kaypro Users Group

SKYP, the Southside Kaypro People, meets the second Wednesday of each month at Value Added Systems on the Mezzanine of the Del Prado at 1701 East 53rd Street at 7:30 p.m. The next meeting will be November 14. For more information call Chris Gruber at 373-4584.

Osborne Users Group

The Osborne Users Group meet the first Wednesday of each month at noon in the Computation Center classroom, Harper 406. The next meeting will be November 7.

DEPARTMENTS

People

The last issue of the *Newsletter* failed to note the promotion of **Henry Patton** from Sr. Computer Operator to Machine Room Supervisor for Operating Services. We apologize for that oversight.

Promotions within the Center:

Don Goldhamer has been promoted from Lead Programmer/Analyst to the Manager of Applications Systems.
David Huber has transferred from cluster assistant to become the Administrative Coordinator of the Micro-computer Distribution Center.

People who have left the Center:

Rich Alderson, Systems Programmer for Operating Systems, is now working at Stanford University.
Ronald Burnett has left his job as Computer Operator for Operating Services.
Etta Franklin, Documentation Librarian for Instruction and Documentation Services, has moved to Wilmington, North Carolina, after working at the Computation Center for over twenty years.
Stephen Kahn has resigned as Data Control Clerk at the Pick cluster to do post-doctoral work in clinical psychology at Harvard University.
David Vlcek, Clerk Messenger for Business Services, has left the Center.

People who have joined the Center:

Nicholas Burke is a new Jr. Programmer/Analyst for Information Systems
Matthew De Florio has been hired as a Desk Clerk at the Staff Offices.
Ted Fant has joined Communications Services as a Sr. Electronics Technician.
Stephen Nesnidal is the new Clerk Messenger for Business Services.
Melinda Shore has joined Applications Systems as a Demonstration Lab Assistant.
Willie Stewart is a new Jr. Electronics Technician for Communications Services.
Stephen Westfall has transferred from the Security Dept. to become a Staff Analyst for Information Technologies and New Services.
Victor Yipp has joined Information Systems as a Project Manager.

The following people have been hired to work in the terminal clusters at Usite, Regenstein, and Pick for the Instruction and Documentation Services Group:

Francis Anton Jr., Thomas Chung, John Dennison, Daniel Levy, Richard Lipinski, Randal Rzasa, Ellen Seebacher, Anthony Pitruzzello, Robert Thompson, and Marc Zola

Notice File

New in the MVS Notice File

08/17/84 **TRT5** NEW VERSION OF TREATISE

08/31/84 **STAT6** Limitations of REQ option for IMSL source

09/12/84 **GRAF1** TELL-A-GRAF Ver. 4.6 Now Available on IBM Through TSO

09/14/84 **XROX9** Xset typesetting emulation now available

09/18/84 **SCRP19** SCRIPT 3.7 To Be Removed October 31

09/20/84 **MICR3** KERMIT documentation in DOCLIST

09/21/84 **MICR4** IBM PC KERMIT Diskettes Available

10/02/84 **XROX10** New XSET Macro, PUB JPRINT and Enhancement to PUB XSET

10/03/84 **COUR1** Computation Center Seminars for Week of October 15

10/03/84 **ROUT5** IBM PC at Pick -- Update

10/08/84 **UGRP2** IBM PC User's Group October Meeting

10/09/84 **SWYL12** New Superwylbur Installed on October 10

10/09/84 **SWYL11** New Public Macro LISTOFF Available

10/16/84 **COMM2** Telephone Numbers for Dialup Terminal/Computer Connect

New in the DEC Notice File

08/17/84 **TRT1** New Version of TREATISE on the IBM 3081

09/14/84 **XR978** Xset typesetting emulation available

09/20/84 **ROUT3** Distributed Computing

Sites Database Available

09/20/84 **MICR3** KERMIT documentation in DOCLIST

09/21/84 **MICR4** IBM PC KERMIT Diskettes Available

09/21/84 **MUSE5** MUSE on Older Version TVI950s

09/24/84 **MUSE6** New Version of MUSE Available for Testing

10/03/84 **ROUT4** Status of IBM PC at Pick

10/03/84 **COUR3** Computation Center Seminars for Week of October 15

10/04/84 **UGRP3** IBM PC User's Group October Meeting

10/10/84 **COMM2** Telephone Numbers for Dialup Terminal/Computer Connection

10/15/84 **MUSE7** MUSE Version 4.1.7 Now in Production

DEC-20 System Wide Mail

13-Sep-84 New Version of SNAP

05-Oct-84 MUSE Version 4.1.7 to Become Production

10-Oct-84 Use 5-3600 For All Digital Data Connections

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the IBM 3081D, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of Superwylbur and TSO sessions is also provided. Statistics for the current month, the preceeding month, and the current month in the prior year are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs for the current month. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the current month, the preceeding month, and the current month in the prior year.

Top Twenty Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the month in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization in August 1984

SERVICE PROVIDED	IBM 3081/MVS August 1984	IBM 3081/MVS July 1984	AMDAHL 470V8/SVS August 1983
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs non-setup jobs tape setup jobs	4:24 2:07 34:25	13:29 9:41 56:59	None Available
Total CPU-hours used	382 hrs 0 min	318 hrs 0 min	
SUPERWYLBUR sessions CPU hours connect hours average session average CPU/session	26,135 19 hrs 59 min 20,590 hrs 47 min 2.75 sec	26,576 16 hrs 54 min 19,929 hrs 44 min 2.29 sec	
TSO sessions CPU hours connect hours average session average CPU/session	2,962 3 hrs 47 min 1020 hrs 21 min 4.60 sec	3,273 4 hrs 31 min 1186 hrs 21 min 4.58 sec	
Jobs submitted Steps executed	63,429 114,971	62,006 107,931	

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority.(85% of jobs are completed at or under the time shown)

Top Twenty MVS Programs in August 1984

Program	Description	Percent	Count
WYLLIST	SUPERWYLBUR List Offline	10.29	12923
SASLPA	SAS	9.44	11859
UCFLBL20	FILEBOL	8.32	10446
IBMDEC	IBM/DEC link utility	4.32	5424
SORT	SyncSort	3.97	4981
IEWL	Linkage editor	3.91	4911
IEBGENER	IBM file handling utility	3.82	4794
IEFBR14	IBM utility - null step	2.98	3741
MARKYBOL	Systems utility	2.66	3339
PGM = *.DD	User defined routines	2.46	3085
SUCCESS	Operating Services utility	2.12	2662
FAIL	Operating Services utility	2.11	2644
BATCH204	Model 204 utility	1.74	2185
IGIFORT	FORTRAN G compiler	1.57	1972
IDCAMS	VSAM utility for catalog operations	1.37	1717
SCRIPTW	SCRIPT	1.26	1585
SPSS	SPSS Version 9	1.09	1363
COMPUSET	Xerox text composing program	1.04	1305
SPSS-X	SPSS version X	0.94	1176
XRXINT	9700 interpreter for Xset	0.91	1142

CHIP - DECsystem-2060 Utilization in August 1984

Account Period	August 1984		July 1984		August 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	83.5	5011	81.5	5145	52.2	3736
EVENING	31.6	710	31.2	812	10.2	538
OVERNIGHT	38.5	669	38.7	642	25.3	568
TOTAL	153.6	6390	151.4	6599	87.7	4842

Top Twenty Chip Programs in August 1984

Program	Description	Percent	Count
OPR	Operator functions	8.94	5855
MM	Electronic mail manager	7.92	5187
EXEC	TOPS-20 command processor	6.61	4330
SYSDPY	Operator interface with job queues	6.56	4292
SYSJOB	System job controller	6.09	3987
WATCH	Generates these statistics	6.09	3987
MMAILR	Network mail daemon	6.09	3987
SHRSRV	File transfer daemon	6.09	3986
IBMSPL	MVS link daemon	6.00	3925
WINDOW	Full screen PTYCON	5.85	3829
MUSE	Full screen editor	4.94	3235
PTYCON	Pseudo-terminal controller	3.13	2049
EMACS	Full screen editor	2.76	1804
SENDER	Local mail daemon	2.21	1449
BATCON	Batch controller	2.16	1413
PEXEC	Test version of EXEC	2.10	1372
1022	Database system	1.80	1181
EDIT	Line editor	1.40	918
DEMAND	Data management system	1.39	912
ROGUE	Game	1.21	791

DALE - DECsystem-2060 Utilization in August 1984

Account Period	August 1984		July 1984		August 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	70.9	5663	78.7	5979	74.9	7006
EVENING	20.7	1087	38.6	1320	18.8	1875
OVERNIGHT	45.1	1110	45.8	1175	34.2	1725
TOTAL	136.7	7860	163.1	8474	127.9	10,606

Top Twenty Dale Programs in August 1984

Program	Description	Percent	Count
1022	Database system	22.39	18783
OPR	Operator functions	8.08	6780
SYSJOB	System job controller	5.15	4325
WATCH	Generates these statistics	5.15	4325
MMAILR	Network mail daemon	5.15	4325
IBMSPL	MVS link daemon	5.13	4305
SYSDPY	Operator interface with job queues	5.13	4301
WINDOW	Full screen PTYCON	5.11	4284
SHRSRV	File transfer daemon	4.90	4109
EXEC	TOPS-20 command processor	4.52	3795
MM	Electronic mail manager	3.29	2764
EDIT	Line editor	2.85	2391
PTYCON	Pseudo-terminal controller	2.75	2305
MUSE	Full screen editor	2.25	1884
SED	Full screen editor	1.97	1657
DEMAND	Data management system	1.96	1648
EMACS	Full-screen editor	1.94	1629
SENDER	Local mail daemon	1.80	1512
BATCON	Batch controller	1.45	1215
NCPCalc	Spreadsheet program	1.01	848

MVS Utilization in September 1984

SERVICE PROVIDED	IBM 3081/MVS September 1984	IBM 3081/MVS August 1984	IBM 3081/MVS September 1983
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	4:16	4:24	11:16
non-setup jobs	2:03	2:07	5:12
tape setup jobs	29:49	34:25	59:44
Total CPU-hours used	317 hrs 0 min	382 hrs 0 min	163 hrs 1 min
SUPERWYLBUR sessions	22,294	26,135	25,359
CPU hours	17 hrs 1 min	19 hrs 59 min	12 hrs 44 min
connect hours	17,716 hrs	20,590 hrs	16,350 hrs
average session	48 min	47 min	38 min
average CPU/session	2.75 sec	2.75 sec	1.81 sec
TSO sessions	3,032	2,962	3,714
CPU hours	5 hrs 19 min	3 hrs 47 min	4 hr 3 min
connect hours	1130 hrs	1020 hrs	1371 hrs
average session	22 min	21 min	22 min
average CPU/session	6.30 sec	4.60 sec	3.92 sec
Jobs submitted	55,372	63,429	47,945
Steps executed	102,136	114,971	80,816

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

Top Twenty MVS Programs in September 1984

Program	Description	Percent	Count
WYLLIST	SUPERWYLBUR List Offline	9.46	10567
SASLPA	SAS	9.23	10306
UCFLBL20	FILEBOL	8.85	9888
IEBGENER	IBM file handling utility	5.17	5779
SORT	SyncSort	4.07	4545
IEWL	Linkage editor	3.44	3839
IBMDEC	IBM/DEC link utility	3.32	3706
IEFBR14	IBM utility - null step	3.15	3518
SUCCESS	Operating Services utility	2.42	2708
FAIL	Operating Services utility	2.38	2659
MARKYBOL	Systems utility	2.28	2543
PGM = *.DD	User defined routines	1.98	2211
BATCH204	Model 204 utility	1.50	1677
IEL0AA	PL/I compiler	1.35	1505
IGIFORT	FORTRAN G compiler	1.32	1474
SCRIPTW	SCRIPT	1.31	1468
IDCAMS	VSAM utility for catalog operations	1.31	1464
SPSSX	SPSS Version X	1.29	1438
COMPUSET	Xerox text composing program	1.16	1294
IEHPROGM	IBM utility for dataset maintenance	.98	1098

CHIP - DECsystem-2060 Utilization in September 1984

Account Period	September 1984		August 1984		September 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	77.0	5223	83.5	5011	58.6	5937
EVENING	29.1	703	31.6	710	13.9	494
OVERNIGHT	42.4	640	38.5	669	20.2	523
TOTAL	148.5	6566	153.6	6390	92.7	6954

Top Twenty Chip Programs in September 1984

Program	Description	Percent	Count
OPR	Operator functions	8.47	5608
MM	Electronic mail manager	7.48	4949
EXEC	TOPS-20 command processor	6.66	4407
SYSDPY	Operator interface with job queues	6.44	4260
WINDOW	Full screen PTYCON	6.17	4084
SYSJOB	System job controller	5.97	3949
WATCH	Generates these statistics	5.97	3949
MMAILR	Network mail daemon	5.96	3946
SHRSRV	File transfer daemon	5.90	3906
IBMSPL	MVS link daemon	5.89	3897
MUSE	Full screen editor	5.26	3481
BITNET	Off-campus electronic mail netwotk	4.14	2742
PTYCON	Pseudo-terminal controller	2.96	1962
EMACS	Full screen editor	2.51	1661
SENDER	Local mail daemon	2.17	1436
BATCON	Batch controller	2.17	1434
1022	Database system	2.01	1328
EDIT	Line editor	1.35	895
DEMAND	Data management system	1.08	716
SED	Full screen editor	1.07	708

DALE - DECsystem-2060 Utilization in September 1984

Account Period	September 1984		August 1984		September 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	51.4	4280	70.9	5663	75.3	5656
EVENING	14.0	846	20.7	1087	14.8	931
OVERNIGHT	27.4	1091	45.1	1110	27.8	1119
TOTAL	92.8	6217	136.7	7860	117.9	7706

Top Twenty Dale Programs in September 1984

Program	Description	Percent	Count
1022	Database system	24.43	16489
OPR	Operator functions	8.56	5774
SYSDPY	Operator interface with job queues	6.41	4326
WATCH	Generates these statistics	5.87	3964
SYSJOB	System job controller	5.87	3964
MMAILR	Network mail daemon	5.87	3964
WINDOW	Full screen PTYCON	4.85	3947
IBMSPL	MVS link daemon	5.84	3940
SHRSRV	File transfer daemon	4.96	3350
EXEC	TOPS-20 command processor	3.60	2428
PTYCON	Pseudo-terminal controller	2.91	1967
MM	Electronic mail manager	2.64	1784
MUSE	Full screen editor	2.56	1725
BATCON	Batch controller	1.76	1191
SENDER	Local mail daemon	1.76	1190
DEMAND	Data management system	1.54	1039
EDIT	Line editor	1.26	853
EMACS	Full-screen editor	1.26	848
NCPCalc	Spreadsheet	1.22	825
SED	Full screen editor	0.98	662

General Information

The Computation Center serves the academic and administrative computing needs of the University of Chicago. We operate an IBM 3081D under MVS, two DECsystem-2060s (called Chip and Dale) under TOPS-20, and a Pyramid 90x under UNIX.

This *Newsletter* was produced using Superwylbur, Xset, and XICS on the IBM 3081D computer, and printed on the Xerox 9700 printer.

Quick Reference Phone Directory

Center information: days	962-7615
Nights and weekends	962-7626

Account Information

PCA Accounts	USITE, Wieboldt 310	5-0588
Other new computer accounts and account changes		962-7158
User billing and records information		962-7158

Advice

Programming Problems	Program Advisor	962-7624
Questions about applications and programs	USITE, Wieboldt 310	
Suggestions,Complaints		
Program Bugs		
Refunds		
Social Science Computing Advice	Pick Advisor	962-7892
	Pick 123	

Materials and Supplies

Computing Materials	Tape Librarians	962-7614
Sales of computer supplies	Tape Librarians	962-7614
Used Equipment	Deborah Gomben	962-7615
Tape-related services		962-7614

Microcomputers and Word Processing

Consultations with new and prospective users	Information Technologies and New Services	962-7174
Office support services		
Advice on word processors, micros,terminals		
New services and technology		

Center Services

Requests for new software and data files		962-7155
Programmer/Analyst services		962-7155
Customized Offline Printing Services		962-6081
Production jobs that require special scheduling and handling	Expediting Group	962-7602
Dataset recovery from Center backup tapes		962-7621
Data entry services		962-7604
Terminal maintenance, communications problems		962-7663

Mailing Lists and Subscriptions

Center mailing lists	962-7158
Memoranda Subscriptions	
Newsletter subscriptions	5-0588

Courses and Seminars

Questions about Center courses and seminars	Educational Coordinator	962-7173
Registration for courses and seminars which require a fee	USITE	5-0588
Registration for courses and seminars which do not require a fee		962-7153
Classroom	Harper 410	962-6014

Terminal Clusters and Equipment

Terminal Clusters	USITE Wieboldt 310
	Regenstein 201
	Abbott 602A
	Pick 123
	Crerar
Card Readers	USITE
Key Punches	USITE
Xerox 2700 Laser Printers	USITE, Pick

Documentation - Online and Offline

Documentation   Terminal Clusters
                                       USITE Business Office
                                       Regenstein Reserve
                                       Harper Reserve
                                       DOCLIST - pub DOCLIST
                                       Bookstore
NOTICE File   MVS - pub NOTICE
                                       Chip - NOTICE
                                       Dale - NOTICE

Dial-up Connections

MODEM   ON CAMPUS   OFF CAMPUS
All Systems 300 Baud   5-8880   753-0980
All Systems 1200 Baud   5-8890   753-0945
IBX DOB (all switches)
300-1200-4800 baud   5-3600
TELENET NETWORK ADDRESS
300 baud   31236A
1200 baud   31236

GANDALF CLASS CODES

SYSTEM	BAUD RATE			
	300	1200	4800	TELENET
MVS	mvs3	mvs12	mvs48	mvstn
CHIP	chip3	chip12	chip48	chiptn
DALE	dale3	dale12	dale48	daletn

Computation Center Administration

Computation Center Director
         Carolyn D. Autrey-Hunley   962-7690
Assoc. Director, Operations and Technical Services
         John E. Iannantuoni   962-7616
Asst. Director, Instruction and Research Information Services
         Harold C. Bloom   962-7155
Asst. Director, Information Technologies and New Services
         George R. Bateman   962-7174
Asst. Director, Administrative Information Services
         David E. Trevvett   962-6018

Newsletter Subscriptions
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

Mailing List Request

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Computation Center
5737 S. University
Chicago, IL 60637

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UNIVERSITY OF CHICAGO
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5737 South University Avenue
Chicago, Illinois 60637

UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Table of Contents

GENERAL NEWS

Winter Quarter, 1985, Computation Center Class Schedule

The Computation Center is once again offering a variety of short, non-credit courses and seminars which are open to the general University community. A schedule of the classes available for Winter Quarter follows. For a complete description of these classes please consult the *Computation Center Seminar and Course Curriculum Guide for 1984-1985* . *The Curriculum Guide* also gives you recommended class sequences to take for different subject areas and lets you plan the Center's classes you want to take during the year. PLEASE NOTE THAT ALL CLASSES ARE NOT OFFERED EACH QUARTER AND YOU MUST CONSULT THE GUIDE TO PLAN YOUR CLASSES ACCORDINGLY. Each seminar and course has an identification number associated with it in order to simplify course selection and registration. Each seminar and course also may have prerequisite classes listed for it. The prerequisite classes, or equivalent knowledge of the material that they cover, are essential to understanding the topics covered in the classes dependent on them. Class instructors work from the assumption that you will have attended the appropriate prerequisite classes or already understand the subjects discussed in those classes. To make effective use of the classes that the Center provides you need to take classes in the sequences suggested in the *Curriculum Guide* .

In addition to the quarterly seminars and courses taught in a classroom setting, the Center also provides videotaped training sessions. More information on video classes can be found in the *Curriculum Guide* and the *Newsletter* .

Registration is required for all courses. Many seminars also require registration. Although many seminars are free of charge, there is a fee for some seminars and courses. It may be paid in cash, charged to a Computation Center billable project (Student and Faculty Personal Computing Accounts, PCA's, are not billable projects), or paid with a University 62 form. A refund will be made if the registrant requests one before the start of the second session of the course in question. All seminars and courses which fail to meet minimum enrollments listed are subject to cancellation. Registrants will be notified if a class is cancelled.

Those interested in registering for courses may do so in person at the Computation Center Usite Business Office, in Wieboldt 310, from 9:00 a.m. to 4:00 p.m., Monday through Friday. Seminar registration is handled differently, consult the class schedule listings below for information. Anyone wishing further information concerning the topics and content of these seminars and courses should examine the *Computation Center Seminar and Course Curriculum Guide for 1984-1985* or contact the Center's Educational Coordinator, Don Crabb, at 962-7173 (or via DEC-20 MM to STAFF.DONCRABB).

Note: All classes are held in the Computation Center Classroom, Harper 406.

Winter Quarter 1985 Seminars

CC105 - **FUNDAMENTALS OF COMPUTER CONCEPTS AND TERMINOLOGY (Two Parts)**
Dates and Times: Monday and Wednesday, January 21 and 23, 3:30 - 5:00
Prerequisites: None
Instructor: Don Crabb

Note: This is a new class, combining material previously covered in CC100 and CC120.

CC110 - INTRODUCTION TO THE UNIVERSITY OF CHICAGO COMPUTATION CENTER FACILITIES AND SOFTWARE
Date and Time: Tuesday, January 22, 3:30 - 5:00
Prerequisites: None
Instructor: Don Crabb

CC400 - OVERVIEW OF COMPUTERIZED TEXT PROCESSING AT THE UNIVERSITY OF CHICAGO
Date and Time: Thursday, January 24, 3:30 - 5:00
Prerequisites: None
Instructor: Don Goldhamer

CC205 - INTRODUCTION TO TEXT EDITING WITH SUPERWYLBUR
Date and Time: Friday, January 25, 3:30 - 5:00
Prerequisites: CC105, CC110, or equivalent knowledge.
Instructor: Vivian Nix

Note: This is a new class, combining material previously covered in CC200 and CC410.

CC430 - TEXT PROCESSING IN THE IBM ENVIRONMENT(TREATISE, SCRIPT) (Two Parts)
Dates and Times: Monday and Wednesday, January 28 and 30, 1:00 - 2:30
Prerequisites: CC105, CC205, or equivalent knowledge.
Instructor: Ed Donner

CC210 - INTRODUCTION TO THE DECSYSTEM-20s (Two Parts)
Dates and Times: Monday and Wednesday, January 28 and 30, 3:30 - 5:00
Prerequisites: CC105, CC110, or equivalent knowledge.
Instructor: Chris Delmar

CC220 - INTRODUCTION TO THE PYRAMID/-UNIX SYSTEM (Two Parts)
Dates and Times: Tuesday and Thursday, January 29 and 31, 3:30 - 5:00
Prerequisites: CC105, CC110, or equivalent knowledge

Instructor: Pete Davis

CC130 - INTRODUCTION TO MAGNETIC TAPE STORAGE
Telephone registration is required for this seminar. Phone 962-7153 to register.
Minimum Enrollment: 10
Maximum Enrollment: 40
Date and Time: Friday, February 1, 3:30 - 5:00
Prerequisites: CC105, CC110, CC205, CC210, or equivalent knowledge.
Instructor: Judy Curry

CC300 - INTRODUCTION TO MICROCOMPUTING (Three Parts)
Registration is required for this seminar. Register at the Usite business office by Friday, February 1.
Dates and Times: Monday, Wednesday, and Friday, February 4, 6, and 8, 3:30 - 5:00
Cost:$20.00
Prerequisites: None
Instructors: Martha Ash and Don Crabb

CC460 - INTRODUCTION TO MUSE WORD PROCESSING ON THE DECSYSTEM-20s (Three Parts)
Dates and Times: Monday, Wednesday, and Friday, February 4, 6, 8, 1:00 - 2:30
Prerequisites: CC210, or equivalent knowledge.
Instructor: Arlene Brown

CC470 - TYPESETTING EMULATION WITH XSET
Telephone registration is required for this seminar. Phone 962-7153 to register.
Minimum Enrollment: 10
Maximum Enrollment: 40
Date and Time: Tuesday, February 5, 3:30 - 5:00
Prerequisites: CC400, CC205, or equivalent knowledge.
Instructor: Joan McGrane

CC630 - INTRODUCTION TO SAS/GRAPH (Two Parts) Telephone registration is required for this seminar. Phone 962-7153 to register
Minimum Enrollment: 10

Maximum Enrollment: 40
Dates and Times: Tuesday and Thursday,
February 5 and 7, 10:30 - 12:00
Prerequisites: CC205 and CC530, or equiv-
alent knowledge.
Instructor: Jim Lichtenstein

CC310 - MICROCOMPUTER DATA COMMUNI-
CATIONS

Date and Time: Monday, February 11, 3:30
- 5:00
Prerequisites: CC105 and CC300, or equiv-
alent knowledge.
Instructor: Martha Ash

CC440 - EMACS FULL SCREEN EDITING ON
THE DECSYSTEM-20s AND PYRAMID/-
UNIX

Date and Time: Tuesday, February 12, 1:00
- 2:30
Prerequisites: CC210 and CC220, or equiv-
alent knowledge.
Instructor: Al Schultz

CC900 - INTRODUCTION TO THE USE AND
DEVELOPMENT OF COURSEWARE ON
THE APPLE MACINTOSH (Two Parts)

Registration is required for this seminar.
Register at the Usite Business Office by
Monday, February 11.
Dates and Times: Tuesday and Thursday,
February 12 and 14, 3:30 - 5:00
Prerequisites: CC105, CC300, Macintosh
user, or equivalent knowledge.
Instructor: Bill Sterner

CC560 - SOCIAL SCIENCE DATA RESOURCES:
HOW TO LOCATE AND ACCESS THEM

Telephone registration is required for this
seminar. Phone 962-7153 to register
Minimum Enrollment: 10
Maximum Enrollment: 40
Date and Time: Wednesday, February 13,
3:30 - 5:00
Prerequisites: None
Instructor: Melissa Trevvett

CC910 - CONNECTING WITH THE UNIVERSE:
HOW TO USE ELECTRONIC MAIL TO
CONTACT COLLEAGUES ACROSS THE
GLOBE

Registration is required for this seminar.
Register at the Usite Business Office by
Thursday, February 14.
Cost:$5.00
Minimum Enrollment: 10
Maximum Enrollment: 40
Date and Time: Friday, February 15, 3:30 -
5:00
Prerequisites: CC105, CC210 or equivalent
knowledge.
Instructor: Don Crabb

Winter Quarter 1985 Courses

CC550 - The Basics of SAS (4 Parts)

Registration is required for this course.
Register at the Usite business office by
Monday, January 28.
Dates and Times: Tuesdays and Thurs-
days, January 29 - February 7, 1:00 - 2:30
Cost: $20.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC205, or equivalent knowl-
edge
Instructor: John Raz

CC520 - Introduction to SPSSX (6 Parts)

Registration is required for this course.
Register at the Usite business office by
Monday, February 11.
Dates and Times: Tuesdays and Thurs-
days, February 12 - February 28, 5:30-7:00
Cost: $30.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC205, or equivalent knowl-
edge.
Instructor: John Raz

Computer Science Department Colloquium Lectures

The University of Chicago Computer Science Department invites all interested members of the university community to attend the January-February Colloquium Lectures.

Symmetry in a Distributed System

Ralph Johnson, Cornell University.
Monday, January 7, 1985, 2:30 - 3:30P.M
Ryerson 276

The Distribution of Class Groups of Quadratic Fields

Hendrik Lenstra, University of Amsterdam.
Friday, January 18, 1985, 2:30 - 3:30P.M.
Ryerson 276

Complexity of Matrix Multiplication

Schmuel Winograd, IBM-Yorktown Heights
Friday, January 18, 1985, 4:30 - 5:30P.M.
Eckhart 133

A Theory of The Learnable

Leslie Valiant, Harvard University
Monday, January 21, 1985, 2:30 - 3:30P.M.

NP Is as Easy as Detecting Unique Solutions

Leslie Valiant, Harvard University
Wednesday, January 23, 1985, 2:30 - 3:30P.M.
Ryerson 276

Networks, Parallel Computation, and VLSI

Thomas Leighton, Massachusetts Institute of Technology
Tuesday, January 22, 1985, 2:30 - 3:30P.M.
and Thursday, January 24, 1985, 2:30 - 3:30P.M.
Ryerson 276

Parallel Algorithms in Linear Algebra

Dexter Kozen, IBM Yorktown Heights
Monday, January 28, 1985, 2:30 - 3:30P.M.
Ryerson 276

The Complexity of Elementary Algebra and Geometry

Dexter Kozen, IBM-Yorktown Heights
Wednesday, January 30, 1985, 2:30 - 3:30P.M.
Ryerson 276

Communication Complexity: The Many-Player Game

Merrick Furst, Carnegie-Mellon University
Tuesday, January 29, 1985, 2:30 - 3:30P.M
Ryerson 276

Business Office at Merriam Closed

Effective December 31,1984, the Computation Center Business Office at the Merriam Building (1313 E. 60th Street) has been closed to campus walk-in business. All such business has been shifted to the Business Office at the Central Users' Site (Usite), which is accessable through Harper Library, which reserves the right to check I.D.s for entrance to the Library.

The Usite Business Office is open from 8:30 A.M. to 12:00 A.M. and from 12:30 P.M. to 4:30 P.M. That office is able to handle all aspects of com-

puter accounts, including the establishment of person-ids, computer projects, personal computer accounts (PCAs), and questions about billings.

External users of Computation Center services who cannot get to Usite through Harper Library should phone 962-7159 to make an appointment to be served at Merriam.

Usite MUX Eliminates Dial-up Access

A new multiplexer, or MUX, produced by Gandalf Inc., has been installed in Usite. By the time you read this, most of the terminals at Usite will have been switched over to it. A MUX acts like a switch-board between the terminals and the mainframe computers. As soon as you turn on the terminal, you are connected to the MUX. You do not have to dial-up. When you enter a carriage return and get the "Enter Class" prompt, you indicate what computer you want to access by typing Chip48, or Dale48, or Mvs48, or Unix48.

The installation of the MUX at Usite has several implications for the user community.

All the terminals will have access to 4800 baud ports (except the Decwriter, which can only operate at 300 baud) By automatically accessing 4800 baud ports, the new MUX allows more terminals than ever before to work at the relatively high baud rate.

The logon procedures will be standardized for the various terminals and the procedures will be simpli-fied. There will be no need to dial-up a line. Since all the Usite terminals will be hardwired at 4800 baud there will be no phone numbers to remember, and there will be only one appropriate baud rate: 4800.

Once all the terminals have switched over to the new MUX, we will change the wake-up settings on the terminals to full duplex and 4800 baud. A DEC or Pyramid user would merely have to turn the

terminal on and press the return key to get the Enter Class prompt--no terminal setup will be nec-essary. MVS users will only have to change the duplex from full to half. On Superwylbur, the com-mand Pub Duplex will make the change.

Users will be able to change the terminal baud rate if all of the 4800 baud ports on the computer are busy. For the Teleray and Wyse terminals, rate changes are made from the keyboard. On Teleray terminals, the the High-Low Baud Rate switch may be set to 1200 baud.

There will no longer be dial-up access to comput-ers from Usite. This means that those people who use our terminals to access a non-Computation Center computer will no longer be able to do so. Users of other computers will have to use the terminals provided by their own facilities.

The data phones will be removed from Usite, and a standard phone will be installed to allow users to place campus calls. For off-campus calls, there is already a pay phone in the canteen area.

New Videotapes at Usite

The Computation Center will be releasing several new videos this month, that will be from 15 minutes to 45 minutes in length and integrated into a sug-gested sequence, to provide unified, coherent, in-structional concept mastery.

A multi-modular DEC-20 series is now in produc-tion. The first three modules of this series are scheduled for release in January. These three vid-eos are described below.

A two part sequence from the editing module of the DEC series is currently available. A 30 minute demonstration of editing with Muse and a 40 minute demonstration of formatting and preparing files to print with Muse are also both available at Usite.

If you are interested in viewing these or any other instructional videos, see the Usite cluster assistants. A current list of instructional videos is posted near the Self-Instruction area.

New Videos:

Muse Editing (30 minutes)
Host: Don Crabb
Instructor: Arlene Brown

> The basic commands for using Muse. Basic knowledge of the DEC-20 is assumed.

Muse Formatting and Printing (40 Minutes)
Host: Don Crabb
Instructor: Arlene Brown

> Formatting Muse files on the Xerox 9700 and the basics of Muse file management and lost file recovery are discussed.

DEC-20 Overview (25 Minutes)
Host: Don Crabb
Instructor: Chris Delmar

> An overview of the DEC-20 hardware and software that are supported by the University of Chicago Computation Center. Getting an account, basic keyboard commands, setup procedures. Available resources are discussed. Recommended for prospective or new DEC-20 users.

DEC-20 Basic Commands (35 minutes)
Host: Don Crabb
Instructor: Chris Delmar

> File manipulation and management will be demonstrated. Login command files, creating, copying, deleting, renaming, and listing files, and accessing different storage structures will be among the topics covered.

DEC-20 Further Commands (15 Minutes)
Host: Don Crabb
Instructor: Chris Delmar

> Further DEC-20 software is explored. Mail Manager (MM), file and directory security, and lost session recovery procedures are

demonstrated.

Kermit/IBM PC/Mainframe Communications
(15 minutes)
Host: Don Crabb
Instructor: Eric Nelson.

> This video demonstrates the use of Kermit to upload and download files between the IBM-PC and our mainframe computers using Kermit. Since the implementation of Kermit to upload and download files is fairly similar for the various versions of Kermit (e.g., the H.P., etc) this video will be of interest to all micro-mainframe communicators.

Distributed Computing Sites

In the last *Newsletter*, the Sites program on the DECs was described. That program accesses an on-line catalog of computing sites on campus.

The following exhibit shows a file produced from the Sites database. The only information requested for this report was the site name, the computers located there, and the operating system. Much more information exists in the full database. To use the program, enter 'sites' at the TOPS-20 prompt. Responding with a question mark to any prompt will help you discover what information is available at that point. The following sites are currently in the database:

Administrative Computing (ADMIN)
    NBI 64

Astrophysics and Physics Computational Facility (AAC)
    Digital Equip Corp VAX 11/780 -- UNIX
    (BSD 4.2)
    Sun 100 -- UNIX 4.2
    Apollo DM 460 -- AEGIS

FPS Array Processor

Ben May Lab (BML)
    Digital PDP 11/24 -- TSX + (v4)
    Digital PDP 11/34 -- RT11 (v5)

Biophysics Computer Graphics Facility (BPHYS)
    Digital Equip Corp VAX 11/750 -- VAX/VMS 3.5

Center for Research in Security Prices (CRSP)
    Perkin-Elmer PE 3210 -- UNIX (v7)

Chemistry Computer Facility (CHEM)
    Digital Equip Corp VAX 11/780 -- VMS

Chemistry project (CHEM2)
    Digital Equip Corp VAX 750 -- VMS (v3.5)
    RIDGE Ridge 32 -- ROS (v3.1)

Committee on Cognition & Communication Lab (COG)
    Digital PDP 11/34 -- RT11
    Digital PDP 11/23 -- RT11

Computation Center (CC)
    IBM 3081D -- MVS
    Digital Equip Corp 2060 -- TOPS-20 (v5.0)
    Pyramid 90x -- UNIX (Berkeley 4.2,
    and System V)

Computer Science/Math (CSM)
    Digital Equip Corp VAX 11/750 -- UNIX
    (BSD 4.2)
    Digital Equip Corp VAX 11/730 -- UNIX
    (BSD 4.2)

Department of Education (EDUC)
    Hewlett-Packard HP9000 -- SDF

Department of Radiology (RAD)
    Digital Equip VAX 11/750 -- VMS

Graduate School of Business Computing Facilities - (GSB)
    Digital Equip Corp 2060 -- TOPS-20 (v5.1)
    Digital Equip Corp VAX 750 -- VAX/VMS
    IBM PC-XT -- PC-DOS

Humanities Pilot Project (HUM)
    LMC MegaMicro -- UNIX (BSD 4.1)
    Apple Macintoshes

James Frank Institute Computation Facility (JFI)
    Momentum Hawk 32 -- UNIX (v4.2)

Kovler Laboratory Computation Center (KLAB)
    Hewlett-Packard HP9000/540 -- HP-UX

Laboratory School (LAB)
    Apple IIe,II +

Laboratory for Astrophysics & Space Research (LASR)
    Harris 800-2CP -- VOS

Law School Computation Facility (LAW)
    NBI 64 -- MS-DOS

National Opinion Research Center (NORC)
    Harris 500 -- VOS

Obstetric, Gynecology, & Pathology Facility (OBGYN)
    Digital PDP 10
    Digital PDP 11/45
    Digital Equip Corp

Ogburn Stouffer Center (OSC)
    Hewlett-Packard HP9000 -- UNIX

Pathology (PATH)
    Hewlett-Packard HP9836

Security (SEC)
    Altos 986-40 -- XENIX

Further information about the Sites program may be obtained from Kay Sandacz at 962-6089.

DATA RESOURCES

— Melissa Trevvett

Special Census Tabulations

To allow users to tailor analyses of census data to their research needs, the Census Bureau distributes Public-Use Microdata Samples (PUMS). The Computation Center holds Public-Use Microdata Sample A, which contains records for a 5% sample of housing units; these records provide data on the characteristics of each unit and the people in it.

The microdata files furnish almost the full richness of detail recorded on questionnaires in the census. Therefore, the user can choose the variables and analyze selected interrelationships rather than simply having to use the variables and units of analysis provided in the summary data from the Census Bureau. For example, researchers can concentrate on the characteristics of certain specially defined populations, such as un-employed homeowners or families with four or more children, or how characteristics of household members are interrelated, such as income and educational attainment of husbands and wives.

Researchers considering microdata use should keep in mind two possible limits: First, the files do not provide sufficient geographic information to permit identifying small geographic areas. For example, cities with under 100,000 inhabitants are not identified as cities but are included in county groups. Second, these are "do-it-yourself" tabulations, that is, the investigator must have access to the computer time needed to summarize or tally the data in order to produce the desired statistics.

The University also owns the software required to access these hierarchical datafiles; see Memo 4341 for this information. For general information about the public-use microdata samples, such as sample design or size or the other public-use samples, call Melissa Trevvett, 962-6092.

The following lists summarize the items included in the microdata files:

Types of Variables On PERSON Record

- Relationship
- Age
- Race and Spanish origin
- Ancestry, Place of birth
- Language spoken at home
- Marital status and marital history
- Education
- Place of residence in 1975
- Detailed geographic information on place of work, carpooling, transportation to work, and travel time to work
- Disability status
- Veteran status
- Labor force characteristics: occupation, industry, class of workers, hours worked
- Work history, including occupation, hours of work per week and year
- Weeks worked or unemployed in 1979
- Income from each of 7 sources
- Poverty Status

Types of Variables On HOUSING Record

- Geographic description, including region, state, SMSA, and type of area
- Type of group quarters
- Housing characteristics, including vacancy type, units at address, units in structure, year structure built, and # of rooms and bedrooms
- Plumbing, heating, kitchen, and bathroom facilities
- Cars, trucks, and vans available
- Farm status
- Utility payments, including yearly cost of oil, coal, water, gas electricity
- Financial information, including real estate taxes, rent, mortgage status, insurance premiums
- Household type, household income information, including presence and age of children
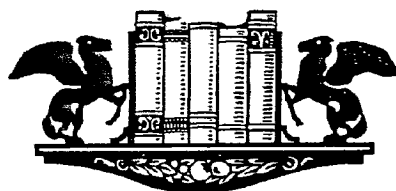
ABC, an MS-DOS PC Statistics Software From ICPSR

The Inter-University Consortium for Social and Political Research (ICPSR) offers ABC, an inexpensive statistical package for microcomputers. ABC, which runs on MS-DOS for the IBM PC and IBM-compatible microcomputers, costs $50. The package handles basic statistical analysis: it produces correlation coefficients for pairs of variables, least-squares regression, univariate statistics, and cross-tabulations.

Data management capabilities include recoding, rearranging, and combining of categories within a single variable or across a set of variables as well as creating or updating a variable using arithmetic operations. ABC supplies its own data entry system, ABCENTRY, and utility software for downloading data from mainframes. There are two versions of ABC, one requiring 256K of RAM and the other requiring 512K of RAM. Variable and case capacity depends upon the amount of RAM available. The Computation Center has not tested this program and does not provide assistance in its use.

For more information on computers which will support ABC, on its capacity to handle data files, or on how to order a demo disk or the package, call Melissa Trevvett, 962-6092.

MVS

Using Xset to Print Poetry

In the past two *Newsletters,* the Computation Center has featured its new typesetter emulation program called Xset. The Xset program formats documents using fonts of differing sizes and types, in either mono-spaced or proportional-spaced fonts. It also allows for variable line leading.

The following exhibit shows how a poem might be printed using Xset. Users may find more information in Memo 4370, or they may access Pub Xsetman from the IBM for more information. This example was provided by Kimberly Huseman of the Computation Center Production Services Department. This example shows how to use a footnote reference to the source. The input is shown below, followed by the output produced by Xset.

```
<NEWS/1COL/HLV3>
<POEM>419<BL>
<PMLN>We grow accustomed to the Dark <XM04>
<PMLN>When Light is put away <XM04>
<PMLN>As when the Neighbor holds the Lamp
<PMLN>To witness her Goodbye <XM04>
<BL><PMLN>A Moment <XM04> We uncertain step <XM04>
<PMLN>For newness of the night
<PMLN>Then <XM04> fit our Vision to the Dark <XM04>
<PMLN>And meet the Road <XM04> erect <XM04>
<BL><PMLN>And so of larger <XM04> Darknesses <XM04>
<PMLN>Those Evenings of the Brain <XM04>
<PMLN>When not a Moon disclose a sign <XM04>
<PMLN>Or Star <XM04> come out <XM04> within <XM04>
<bl><PMLN>The Bravest <XM04> grope a little <XM04>
<PMLN>And sometimes hit a Tree
<PMLN>Directly in the Forehead <XM04>
<PMLN>But as they learn to see <XM04>
<BL><PMLN>Either the Darkness alters <XM04>
<PMLN>Or something in the sight
<PMLN>Adjusts itself to Midnight <XM04>
<PMLN>And Life steps almost straight.<EPM>
<BL><IT>c. 1862 <CP><IT/XM04>Emily Dickinson<RO><FT>
Thomas H. Johnson, Editor, <IT>The Complete Poems
```

of Emily Dickinson
  <RO>(Boston: Little, Brown, and Company, 1960)<EFT>

The output follows:

419

We grow accustomed to the Dark —
When Light is put away —
As when the Neighbor holds the Lamp
To witness her Goodbye —

A Moment — We uncertain step —
For newness of the night
Then — fit our Vision to the Dark —
And meet the Road — erect —

And so of larger — Darknesses —
Those Evenings of the Brain —
When not a Moon disclose a sign —
Or Star — come out — within —

The Bravest — grope a little —
And sometimes hit a Tree
Directly in the Forehead —
But as they learn to see —

Either the Darkness alters —
Or something in the sight
Adjusts itself to Midnight —
And Life steps almost straight.

c. 1862   — Emily Dickinson[1]

---

[1] Thomas H. Johnson, Editor, *The Complete Poems of Emily Dickinson* (Boston: Little, Brown, and Company, 1960)

Xerox 2700 Printing with Pub Listoff

The Superwylbur public macro Listoff has the capability of preparing your document to be printed on any of the Center's Xerox 2700 laser printers. To use this feature you simply specify the printer location in the following form:

     Pub Listoff @cusp: or
     Pub Listoff @Pick:

If you want to print in portrait mode then use the following:

     Pub Listoff @cusp:Portrait or
     Pub Listoff @Pick:Portrait

In portrait mode printing, italic and bold latin fonts are available as font numbers 2 and 3 respectively. See Memo 4361 for further information about Xerox 2700 features.

Use of Superwylbur Macros Made Easier

Several Superwylbur macros -- Listoff, Treatise, Script, Netmail, Xset, and about ten others -- help users by collecting JCL and running jobs. Some of the macros ask so many questions that experienced users will find them tedious, and get frustrated with responding to all of the many, many questions the macros must ask.

It is possible to eliminate most questions from these macros by providing the answers to the questions ahead of time. There are two methods of providing such answers -- as arguments in the macro call, or as arguments in an initialization file for the macro. These two methods complement each other; they can be used separately or in combination to give great flexibility.

There are three kinds of arguments to macros:

- **positional**
- **keyword**
- **switches**

Positional arguments are recognized by their position at the beginning of the string of arguments, and may only be used in the macro call itself. Thus, in

Pub Listoff User = ABCD Duplex

the macro name "Listoff" is a positional argument to the Pub command.

The string "User = Abcd" is a keyword argument in which "User" is the keyword and "Abcd" is the value to be assigned to User.

The word "Duplex" is a switch which could have the alternative specification in its keyword form as "Duplex = Yes".

Keyword and switch arguments can be collected into a file and automatically used each time the macro is called. Such a file is called an initialization file, default file, or profile for that macro. Default files are identified, located and executed by the macro when it searches your default Superwylbur library. All you need to do to create a default file of arguments is to save it into that library in a member named for the macro, e.g.

     ? <u>Collect</u>
     1. ? <u>Duplex</u>
     2. ? <u>User = Abcd</u>
     3. ? <u>***</u>
     ? <u>Save</u> <u>Into</u> <u>%Listoff</u>

and then call the macro, whenever you like, without

requiring arguments:

<u>Pub</u> <u>Listoff</u>

If you have never created a Superwylbur profile (see Memo 4305) then the first time you save a default file you must include a "space" parameter:

<u>Save</u> <u>Into</u> %<u>Listoff</u> <u>Space</u> = (TRK,(1,1,1))

Arguments may be saved in a default file as lists (A, B, C, ...) with or without commas, or one-to-a-line as shown in the example above.

The argument keywords and switches which are valid for each macro are documented in the Memorandum which describes the macro, and can also be found in the macro's help files.

Tell-A-Graf and the Data Connection are Available under TSO

Tell-A-Graf and the Data Connection, both products of ISSCO, are now ready for use on the IBM 3081 under TSO.

Tell-A-Graf is an interactive graphics program that does not require that the user know a standard programming language. Commands for Tell-A-Graf are entered in an English-like language. The program may be requested to display a plot, store the graphics information for later use on a different graphics device.

The facilities of the Data Connection expand the usefulness of Tell-A-Graf greatly by making it possible to use any on-line data from already existing files or reports as Tell-A-Graf input. The necessity for re-entering data (and the possibility of errors) is avoided. This system is of interest to our entire community of users. For example, reports generated on a micro-computer can be uploaded to the IBM, where data could be selected for high-quality color graphic display.

Data Connection consists of four distinct utilities:

1. **Report Connection** allows the user to select data embedded as tables in on-line reports (say, a thesis, or report from a statistical package) as input for Tell-A-Graf. The exact rows or columns of data to be chosen can be specified.

2. **File Connection** is a similar utility that allows data in sequential files to be used as input for Tell-A-Graf.

3. **Decision Support Connection** is a group of features within Tell-A-Graf itself. Calculations and rearrangements of data can be performed before a graph is created.

4. **External Program Connection** provides Fortran subroutines that may be called from the user's own program. These subroutines can transfer data and graphics commands directly into a file that Tell-A-Graf can use.

The names of Tell-A-Graf, Report Connection, and File Connection in TSO are Tag, Repcon, and Filcon, respectively. The following example illustrates the use of the new system. A written report containing tables exists online as microrg.data. The user writes a short command file for the Report Connection, reppo.data. The Report Connection processes both files and produces an intemediate file that Tell-A-Graf can use to create a graph. To use Report Connection, type in "Repcon" at the TSO Ready prompt. Report Connection prompts for the input files and produces a Tell-A-Graf-ready file, repsav.data, and error file, reptra.data.

The written report contains the following table:

Number of Organisms by Soil Type and Depth

	Surface	Percent	Not-exposed	Percent
Clay				
Not Classified	437	54.35	227	28.23
Bacteria	7,507	90.70	700	8.46
Molds	16,537	58.19	11,410	40.15
TOTAL	24,483	65.28	12,338	32.90
Loamy				
Not Classified	1,995	18.30	6,702	61.47
Bacteria	2,572	67.76	1,137	29.95
Molds	81,935	23.95	250,460	73.22
TOTAL	86,503	24.25	258,300	72.40
Sandy				
Not Classified	280	31.39	455	51.01
Bacteria	2,082	78.80	490	18.55
Molds	11,935	38.29	18,375	58.96
TOTAL	14,298	41.20	19,320	55.67

A file of commands used by Report Connection is prepared. It directs where to start looking for the table's data and identifies the table type as complex. (The row lables are really two-tiered in this example.) The command file, reppo.data, also requests that the "TOTAL" rows be excluded and that only columns 1 and 3 be used.

```
DOWN TO "Number of Organisms".
FORGET "TOTAL".
USE ONLY COLUMNS 1,3.
SPLIT BY MAJOR-LABEL.
GET COMPOUND TABLE.
GET TITLE.
```

The user logs on to TSO, and uses the two files to create a command file for Tell-A-Graf:

```
READY
REPCON
ENTER DATA FILE NAME:
microrg.data
ENTER DATA FORMAT NAME: (CR) [ This optional file is not used.]

ENTER COMMAND-FILE NAME:
reppo.data
COMMAND FILE ASSIGNED.

END OF REPORT CONNECTION 1.1
```

       RUN ON 11/08/84 USING SERIAL NUMBER 9999 AT UNIV CHICAGO
       PROPRIETARY SOFTWARE OF ISSCO, SAN DIEGO, CA

The new file, repsav.data, really looks like this:

       DIVISION-LABELS "Not Classified" "Bacteria" "Molds" .
       INPUT DATA.
       "Surface"
       1 437 2 7507 3 16537
       "Not-exposed"
       1 227 2 700 3 11410
       END OF DATA.
       INDEPENDENT AXIS LABEL IS --
       "Clay".
       TITLE TEXT IS "Number of Organisms by Soil Type and Depth" .
       GO.
       FILE
       .
       .
       .

Data for loamy and sandy soil are included in the actual file, too.

Now Tell-A-Graf is used to display the graph. (The first time Tell-A-Graf is used, the users must change their TSORGN to 2000K. This is done with ACF, only once, as follows:

       READY
       ACF (CR)
       CHANGE logonid TSORGN(2000) (CR)
       END
       READY

And then,
       READY
       Tag
       WILL YOU BE REQUESTING A CALCOMP PLOT
       DURING THIS SESSION:
       ENTER YES OR NO:
       yes
       WHAT DO YOU WANT TO NAME THE CALCOMP FILE?
       (NO MORE THAN 8 CHARACTERS BETWEEN PERIODS,
       E.G. MYCALMP.PLT)
       ENTER NAME:
       first.plt
       SPECIFY FILES:
       repsav.data

GENERATE LEVEL .. ENTER:
gen a bar.
GENERATING A VERTICAL BAR CHART.
ENTER:
go.
[and Voila! If your primary device is a graphics terminal, a bar chart appears.]

GENERATE LEVEL ..ENTER
continue.
send.
[The graph vectors are written to a file for the Calcomp Plotter.]
GENERATE LEVEL .. ENTER
quit.
[Closing messages from Tell-A-Graf are displayed.]

The PLOT Clist which is available under TSO can now be used to schedule an actual hard-copy plot from the Calcomp plotter. A clist is an interactive program that prompts for all information required. Just type in "PLOT" at the TSO READY prompt.

The available documentation for the new system is:

The Tell-A-Graf Reference Manual (R90) is available at Regenstein, Harper, and Crerar Reserves and at most terminal clusters. It can be purchased at the University Bookstore, 950 E. 58th Street.

The Data Connection User's Manual is a complete description of all facilities of the Data Connection. It is available for perusal at Regenstein, Harper, and Crerar Reading Rooms and most terminal clusters (R90C). It may be purchased through the Usite Business Office (5-0588) or from University Bookstore, 950 E. 58th Street.

The relevant memoranda are: Memorandum 4369, *Using Tell-A-Graf and the Data Connection under TSO*, and Memorandum 4331, *Using the Calcomp 1051 Plotter under MVS*.

A black-and-white version of the red and green (default colors) bar graph is reproduced below:

PYRAMID/UNIX

Floating Point Processor Enhances Pyramid Performance

The Pyramid floating point processor was installed on the Pyramid shortly after Thanksgiving. The latest release of Pyramid's operating system was installed also and the performance of the upgraded machine was analyzed.

To establish a standard of comparison, many types of programming tasks were given to the Pyramid, before and after the new installations. Figures for the same tasks run on a DEC Vax 780 with a floating point accelerator were also available.

The systems compared were:

      The Pyramid before : 3 Meg, data cache but no floating point accelerator, under OSx 2.2

      The Pyramid after : 6 Meg, data cache plus floating point accelerator, under OSx 2.3

      Vax 780: 8 Meg, with floating point accelerator under BSD 4.2.

In summary, the Pyramid is now about three times faster than it was in performing double and single precision floating point operations. The Pyramid is now roughly twice as fast as the Vax 780 for both floating point and integer manipulations. One exception to this general picture is the area of double precision exponential operations, where Vax-Pyramid performance is about equal.

The values given are relative to the Vax time, with the actual Vax time listed. Depending on the task, time listed is user, system, or real time; time is noted respectively as u-sec, s-sec, or r-sec.

Standard Measures

Task	After	Before	Vax	Actual Vax
Compile Fortran program	1.0	1.77	1.0	9.0 r-sec.
Double precision FP exponential operations	1.1	2.9	1.0	27. u-sec.
Double precision matrix multiplication	.80	2.31	1.0	39.5 u-sec.
Real matrix multiplication	.47	.99	1.0	46.1 u-sec.
Integer matrix multiplication	.70	.62	1.0	45.2 u-sec.
Block I/O	.47	.57	1.0	16.7 u sec.
Integer matrix multiplication	.47	.46	1.0	10.8 u-sec.
Floating point matrix multiplication	.68	1.27	1.0	12.9 u-sec.
Double precision FP matrix	.46	1.05	1.0	13.7 u-sec.

Pyramid Disk Storage Backup Policy

All disk storage on the Pyramid is fully backed up weekly. Typically, the backup is done early morning on Monday. Each week's backup tape is kept for a month. There are a few months that have five Mondays. For these months, the fifth Monday tape is kept until another month with a fifth Monday occurs.

The backup procedure verifies that each class account, PCA, or regular directory has an owner who is funded and is a member in good standing of the project which is being charged for disk storage. Some directories may not have valid owners because:

- The project expired
- The project has run out of funds
- The person has been removed from the project

When such directories are found, the project administrator will be notified by electronic mail. The directories will be moved to a holding area where they will be kept for two weeks. After two weeks, they will be archived onto tape. Directories may be restored from the holding area without charge, but restoration from the tape archive will require the intervention of Production Services for a fee.

An on-line restoration procedure for users on the Pyramid will be announced shortly. Users will be able to examine the contents of the holding directory to locate and restore their materials. The on-line procedure will also allow users to examine a directory of the archive tape, and submit a request to Operating Services for restoration.

TOPS-20

Muse97, New Version, Prints Muse Files on 9700

A new version of Muse97 has been installed. For those unfamiliar with the old version, Muse97 is a set of routines through which Muse files can be printed on the Center's Xerox 9700 printers with alternate fonts, superscripts and subscripts. In Muse the alternate fonts may be chosen via the Bold, Alternate, and Underline keys.

The most important change from the previous version has to do with the way superscripts and subscripts are printed.

In the previous version only one superscript line and/or one subscript line could be printed with any single baseline. Furthermore, the text from the Muse superscript or subscript lines was being printed in the 9700 superscript or subscript font and overlaid on the baseline.

In the new version, up to 6 superscript lines and 6 subscript lines may be printed with any single baseline. The superscript and subscript lines may be in whatever font or fonts the user selects, and they will be printed on the 9700 with actual half line vertical spacing as Muse intends them to be.

Those who wish to continue using the old mode of superscripting and subscripting will have that option, but the warnings listed in the memo cited below should be read carefully.

Another change has to do with use of the Overlay key. In the old version, all overlaying characters were printed in the extended Latin font, which contains most of the diacritics. In the new version, the user may choose to have the overlaying characters print in any of the available fonts.

Ten new translate tables have been made available. Translate tables determine which fonts will be selected by the the various Muse function keys. Selecting one translate table might cause the Bold key to be switched from Roman Latin font to a Bold Latin font, while another table may specify that the same key would be used to switch between Roman Latin and one of the fonts which contain mathematical symbols.

Listings of the available translate tables and documentation for using Muse97 can be found in Memo 2057 or Notes:Muse97.

When you use the default translate table, bold = roman bold, alternate = roman italic, and overlay = overstruck characters. These defaults make your file usable on any printer.

WordMarc files also can be printed on the Center's Xerox 9700s via the Muse97 program. This method provides for alternate font selection and half line spacing for superscript and subscript lines. Details on how to use Muse97 are in the Center Memo 2057, "Muse97." Specific details on how to use Muse97 with WordMarc files will be in the next issue of this *Newsletter* and in an upcoming revision of Memo 2050, "Muse Full Screen Editing at U of C."

MICROCOMPUTING

Printing Wordstar files on the Xerox 9700

WS97 is a new printing routine that enables WordStar files to be printed on the Xerox 9700s with alternate fonts, superscripts, and subscripts. Currently, the program is available in a test version only. That is, you may use it, but at your own risk.

Font selection is made by using such familiar WordStar functions as Bold, Doublestrike, Alternate, and the User-Patches <Control-R>, <Control--Q>, <Control-W>, and <Control-E>. For Chartech users, there is an option for selecting a translate table which causes most of the characters immediately following a <CONTROL-E> to be printed using the standard Chartech dictionary.

WS97 is documented in Memo 2058, *Printing Wordstar Files on the 9700 With Multiple Fonts,* which is also available as NOTES:WS97 on the DECs. The steps for using WS97 are as follows:

1. Create the document in WordStar using the correct WordStar functions to indicate the alternate fonts you wish to use. (The process of selecting these correspondences is described in detail in the memo. It is a simple process, but the flexibility of the program provides for too many options to be adequately discussed here.)

2. Store the finished document, using the Save-to Disk option in the WordStar Print Menu.

3. Use Kermit to send the saved file to either of the DEC-20s in 8-bit format.

Once the file is on the DEC, you print it by entering, "ws97" in response to the "@" prompt, e.g.,

@ <u>ws97</u>

This program asks where the file is, and for such printing options as number of copies, delivery site, type of paper, etc. It also asks you to select a table which contains the mappings between the WordStar function keys and the 9700 fonts you want them to designate. Note that this is the only time you actually specify this table.

Although only a limited number of the translate tables which provide alternate mappings between WordStar functions and 9700 fonts have been set up so far, new ones can be installed fairly quickly. For instance if you created a document in which you used the Bold function to indicate a switch to a Greek alphabet, then a new table that provides a mapping between <Control-B> and the 9700 Greek font, can be set up. In the future, there may be ways for the user to install such tables themselves, but for now we prefer that it be done only by Center staff. Call Norman Caplan at 962-7575 if you have such a request.

Variations of the Chartech dictionary, and other schemes in which every character must be mapped to a separate table can also be accomodated, although such implementations will be more time-consuming and may eventually entail a surcharge for the installation.

Microcomputer Distribution Center

The last *Newsletter* stated that orders and purchases through the University's Apple Consortium agreement can be made only at the Microcomputer Distribution Center(MDC). The MDC is located at 1307 East 60th Street and can be accessed by the first floor rear entrance. The MDC usually carries an inventory of all Macintosh products indicated on the Apple price list, with the exception of 300 baud modems.

Other items on the Apple price list, like the Apple IIe and Lisa, can also be purchased at the MDC, but require a deposit. (Deliveries of these backorders can take up to 8-10 weeks.) To place an order, pick up an Apple price list and order form available at the MDC, Usite business office, or the Staff office building. Call 962-3452 to verify availability of item(s) in our current inventory, and then come to the MDC. With the exception of orders from full-time faculty, personal orders require payment by cashier's check, certified check, or money order payable to the University of Chicago. Hours are 10-4, Mon - Fri.

User Group News Policy

To prevent misunderstandings and to better promote microcomputer user group activities, the Computation Center is instituting the following publication policy for user group news. The *Newsletter* will publish news about all user groups who inform us in writing about their activities. Hardcopy notices, press releases, etc. may be sent to us by regular mail, faculty exchange, or electronic mail.

We also encourage the use of the mailing form on the second-to-last page of this *Newsletter*. It allows for simple and accurate communications.

Although we have article deadlines two weeks before the publication date, we will make every effort to include short notices from user groups up to the time of publication.

We want to hear about your group's activities and we want to be accurate and responsible journalists. This method will achieve those goals.

Kermit Now Available On TSO

Kermit, a communications program which allows the transfer of files from microcomputers to mainframes and vice versa, is now available on TSO. Files which have been uploaded to TSO can then be used via Superwylbur. Kermit has been available on both Chip and Dale for some time.

The Kermit program is loaded into a microcomputer's memory from the Kermit diskette. Once the Kermit program is accessed, the user dials one of the Computation Center's mainframe computers, using a telephone with a modem or ITE/DOB. When the mainframe is accessed, the user can upload or download files between the micro and mainframe. The Kermit user moves from micro to mainframe to perform checking functions by using simple commands. When the user is connected to the mainframe, Kermit serves as a simple terminal emulator.

Currently, there are versions of Kermit for the IBM PC and Apple II (II + and IIe) which upload and download to both the DECs and TSO. Additional Kermits are available for communications to the DEC's. Kermit packets can be purchased from the Usite Business Office for $15.00. The packets contain the Kermit diskette and documentation. Watch the logon messages, Flash, and Notice files for new releases of Kermit.

Apple/Macintosh Development Agreement

Apple Computer and the Computation Center encourage members of the University community to become Apple Registered Developers. Ideas for utility or application software in science, business, statistics, or education are being sought for the Macintosh.

For a first-year fee of $150, Registered Developers would have access to the Center's technical liaison with Apple for limited technical support through the Computation Center on specific problems, the Macintosh Developer and User Bulletin Boards on Chip, a UC Developers Group, and an *Introduction to the Macintosh Seminar.* Our technical liaison will register developers with the Apple Macintosh Group (the people who made the Macintosh!) for electronic and telephone inquiries.

The first level of support for Apple Registered Developers is the technical liaison person who will attempt to resolve questions before passing them on to Apple.

Additional support is available directly from Apple through the Apple Consortium Agreement with the University. As optional expenses, the *Inside Macintosh* documentation ($100), and the Lisa/Macintosh cross development software diskettes and *Inside Macintosh Updates* ($100) are available from Apple through the mail. The Microcomputer Distribution Center is taking orders for "Macintosh High School" developer training (approx. $1,000), and a 24 hour on-line database and research service (approx. $600/6 months), may be ordered through the Microcomputer Distribution Center The latter is

recommended for those developers who want an intensive technical support service from Apple that is in addition to the Computation Center's services.

The Apple recommended development environment is the Lisa/Macintosh cross development system. Apple's software utilities, training, and technical support are designed for this system with Pascal as the favored programming language. Other environments include Forth, C, Sumaccs (a Unix based cross-compiler), and Basic.

The basic guide in copyright and ownership matters is the individual's existing agreement with the University of Chicago. Distinct from this, Apple Computer Company and the Computation Center of the University of Chicago make no claims to ownership and copyright.

To become an Apple Registered Developer, developers must provide a project statement describing their application (this may be designated confidential), agree to give a single copy of finished software to the Apple Development Library (no duplicates will be made), fill in a questionnaire, and remit $150 for the first year of support. An extended description of the above support and the application form are available at Usite.

Appleday Display

A display of Apple equipment and software will be held in the Computation Center Classroom, Harper 406, 10:00A.M to 4:00P.M., Thursday, January 17, 1985. Phillip Okun, an Apple Sales Representaive will be available to answer questions.

Macintosh/Apple High School Orientation

Fred Bockman, Apple's local Technical Representative will present an orientation to Macintosh High School, which will give the prerequisites for those interested in becoming Macintosh Developers and also explain the Macintosh Tool Box, a set of ROM-based utilities. He will also give some details of a Star Trek program he is writing. The orientation is called "The Introduction to Macintosh Development", and will be held Friday, January 11, 1985, in the Computation Center Classroom, Harper 406, from 9:30 until 12:00.

Mac High School Dates

Apple Developers are invited to attend Mac High School. Two separate series of three-day seminars will be held at the President's Plaza Apple Offices, which are located in Chicago, and are accessible by public transportation. Each three-day seminar costs approximately $1000.00, and registration may be arranged with the Microcomputer Distribution Center. Other details of the seminars may be arranged with the MDC. The dates of the two sessions are:

February 5,6,7

March 27,28,29

WordMarc/Muse File Transfers

Muse is word processor available on the DEC20s. WordMarc is the microcomputer version of Muse and it runs on the IBM PC under the PC DOS operating systems. WordMarc/Muse use their own unique file structure. Because this unique file structure contains control and escape sequences, the file is compact, but it is also less transferable. To facilitate transfer among operating systems as well as to insure transfer of all of the Muse formatting information within any communications packages being used, a utility called Mudump is used. Mudump changes the Muse-unique file to an ASCII equivalent, that is, a file using an industry standard telephone-line-transmittable character set file.

The Mudump program is run twice, once before the file is sent and again on the receiving machine after successful transmission of the data file.

If you have a report created on a PC and want to get it to another PC, simply move the floppy disk from one machine to the other. However, there are no floppy disks on the DEC20s, and even if there were, WordMarc and Muse store information about the characteristics of the operating system on which the file was created.

To change this header information, and to insure that the telecommunication process does not strip any information from the file, the Mudump utility takes the WordMarc-unique file and creates a generic file utilizing the ASCII standard character set. Once this generic file has been created, there is no data that any telecommunications package can strip and the generic file no longer delineates the characteristics of the operating system. When the utility is run on the receiving machine, the operating system characteristics are placed in the header, and the WordMarc-unique file is recreated.

On the DEC-20s, Mudump is a system utility accessible at the @ prompt level of the system. On the PC, the utility resides on the utility disk.

To gain access to the utility you type "mudump" for all machines. The sequence of prompts for converting a Muse file to an ASCII transfer file are documented below.

@mudump
TO or FROM Muse format (FROM,TO, < >)? from
Input Muse file: primer.mus
Output transfer file: primer.trnsfr

The steps for converting a WordMarc file to an ASCII transfer file are:

> Replace program disk with utility disk in drive A.
> > A:
> > A: mudump
> > To or From WorMarc Format?
> > Input WordMarc file:B: primer.mus
> > Output Transfer file:B:primer.tra

Documentation

DEPARTMENTS

People

Changes within the Center:

Yvonne Behn has been promoted from Secretary III to Documentation Librarian with the Instruction and Documentation Services Group.
Beth Christy has transferred from Programmer-/Analyst for Information Systems to Jr. Systems Programmer II with Operating Systems.
David Huber, Computer Cluster Assistant, has been promoted to Administrative Coordinator of the Microcomputer Distribution Center.
Steve Upp is now a Demonstration Laboratory Assistant for Applications Systems and is located in the Staff Offices.

People who have joined the Center:

Christophe deGrazia is a new Computer Operator Trainee for Operating Services.
Cynthia Hedricks has been hired as a new Computer Cluster Assistant at the Central Users' Site.
Major Robinson has become a new Computer Cluster Assistant at the Regenstein Cluster.

People who have left the Center:

Nicholas Burke and **Rasa Varanka** , Jr. Programmer/Analysts have left Information Systems.

New Documentation Available

10/25/84 **6001** Kermit for the IBM PC: Gives examples of sessions using Kermit to upload and download files to the DECs and TSO. Also addresses hardware requirements for using Kermit and discusses the software and advanced Kermit features. A summary of Kermit commands is given at the back.

10/31/84 **R153** Using UNIX on the Pyramid: This manual describes specific details on how to get an account and how to logon to the Computation Center's Pyramid computer. The manual covers most introductory material a new user who is not familiar with the UNIX operating system needs to know. The contents include: creating and editing files, running programs, regulating file protection, and programs to aid the project administrator.

10/31/84 **R154** Kermit For TSO At The U of C: This is a generic manual which explains hardware and software requirements and commands for TSO Kermit. It is not aimed at any particular microcomputer, but serves as a general reference.

11/08/84 **4370** Using Xset at the U of C: Describes the three Superwylbur macros which create JCL for the Xset procedure: Pub Xsetman, Pub Xset and Pub Jprint.

12/17/84 **6002** Kermit for Apple microcomputers: Memo 6002 describes procedures for uploading and downloading files between the Apple IIe

(II and II +) and the DEC-20s and the IBM 3081D.

Recently Updated Documentation

10/20/84 **2046** Transfer and Xfer

10/20/84 **2005** DEC Doclist

10/20/84 **2047** Dual processor environment

10/29/84 **4313** Superwylbur Macros Available

10/29/84 **4305** Advanced Superwylbur Features

11/02/84 **4075** UOCVTOC, USERVTOC, and STVTOC

11/02/84 **2032** SYMIFY: Symbol set selection

11/07/84 **4168** Rates: Ext. Non-Academic

11/07/84 **4169** Rates: External Academic

11/07/84 **4170** Rates: Internal Academic

11/07/84 **2057** Muse97

11/13/84 **4340** NORC General Social Surveys

12/11/84 **4285** Using Efapll at the U of C

12/17/84 **4347** Setting Up a Project

New in the MVS Notice File

10/25/84 **NEWS10** IFPS/Optimum to be removed

10/30/84 **XROX11** Limitations to Xset

11/02/84 **MICR5** Bug in DEC.INI file on Kermit Diskette for IBM PC

11/05/84 **GRAF1** Tell-A-Graf Ver. 4.6 Now Available on IBM Through TSO

11/21/84 **MICR2** Availability of Kermit

12/07/84 **ACCT2** Shift Accounting Boundaries

12/07/84 **TAPE12** File Protection Rings Now Available

12/10/84 **COUR1** Setting up Winter Quarter class accounts

New in the DEC Notice File

10/25/84 **DISK2** Moving files from DS1: to DS2:

11/02/84 **NEWS9** Test version of LINK

11/02/84 **NEWS10** New GSS master file

11/02/84 **MICR5** Bug in DEC.INI File on Kermit Diskette for IBM PC

11/02/84 **MICR6** MICLAB: Software directory

11/02/84 **NEWS11** Current Sort/Merge

11/02/84 **NEWS12** Rag bond delivery procedures

11/02/84 **NEWS13** DALE printer is gone

11/02/84 **MVS2** Version 2017 of MVS program

11/02/84 **STAT5** New version of SNAP

11/02/84 **FORT2** New FORDDT

11/08/84 **Muse8** New Version of Muse97 in Test

11/21/1984 **MICR2** Availability of Kermit

12/03/1984 **Muse9** Printing Muse merged documents

12/04/1984 **TAPE4** DUMP22 Version 4.2 In Production

12/10/1984 **COUR8** Opening Winter Quarter class accounts

12/12/1984 **NCP3** Version 2.1 of NCPCALC Now Production

DEC-20 System Wide Mail

15 Oct 84 Muse Version 4.1.7 Now in Production

15 Oct 84 Muse Status Report

26 Oct 84 Use only 5-3600 for DOBs

29 Nov 84 New Muse97 Now in Production

4 Dec 84 System 1022 Is NOT Going Away

4 Dec 84 DUMP22 Version 4.2 In Production

10 Dec 84 GSS files to be deleted

12 Dec 84 Version 2.1 of NCPCALC Now Production

Equipment Exchange

The Computation Center maintains an on-line file of equipment that people wish to buy or sell. This file may be read on the DEC with the command, Type Wares:Wares. On the IBM 3081, the file may be displayed at your terminal with the SuperWylbur command List From &Public.Wares. The current contents are reproduced below.

Want Ad Resale Equipment Service

This file contains a list of communications equipment and a contact. BUY means the person wishes to buy an item - SELL that the person wishes to sell an item. To make or change an entry in the file, contact Deborah Gomben at 962-7615.This list is a convenience for our users. The Computation Center is not responsible for the condition of merchandise advertised herein.

ITEM	DESCRIPTION	PRICE	NAME	PHONE (or contact)
Printer	SELL 860 Matrix W/Keybrd	1500	P.J. Morrison	962-6106
Terminal	SELL Teleray Model 12	700	P.J. Morrison	962-6106
IBM P/C	SELL Disk,192K,Software	3000	Scott Schell	30021, 643-1168
Intel.Typ	SELL EXXON Model 140D	4500	Janice Gardner	962-8801
Modem	BUY COMDATA 302	Offer	Dave Heyse	448-7887, W1.1QAZ
Terminal	BUY CRT	Offer	Priscilla Frisch	962-8211
Diskettes	SELL 5 1/4" Unformatted	+ 2.25	Peter Chen	962-3453,752-1355
Modem	SELL Hayes 300b Smart	175	B.D. Wright	962-1596
Terminal	SELL DEC LA34 Printer	Offer	Don Goldhamer	962-7166
Lemon	SELL Surge Suppressor	20	B.D. Wright	962-1596
Printer	SELL OKIDATA82A Ser-Parl	500	Lynn Vogel	962-1429
Terminal	BUY Televideo 950	Offer	Behrooz Hadavi	962-7809
Printer	SELL Port.Matrix,Parall.	300	Bill Sterner	962-7172
TRS-M100	SELL Port., 24K, Telecom	550	Bill Sterner	962-7172
Terminal	SELL ADM3A	300	Mark Turner	241-7646
Terminals	BUY Xerox 850	Offer	Mark Weber	962-9611
TRS-80	SELL Disk Drives	Offer	Carl Kalitta	962-8175
Computer	BUY Osborne	Offer	M. Dann	624-6061
Terminal	SELL Televideo 925	600	Carl Kalitta	962-8175
Terminal	SELL LA34 Decwriter IV	550	Carl Kalitta	962-8175
Terminal	SELL TAB 132/15,Prt Port	1400	Carl Kalitta	962-8175
Terminal	SELL Teleray 10E	450	J. Anderson	655-0040
Terminal	SELL ADDS Viewpoint	Offer	Jim McGlew	684-1735
Modem	SELL Penril 300/1200	Offer	Jim McGlew	684-1735
Terminal	SELL Microdata Prisim 4	Offer	Adele Pardee	962-8401
Computer	SELL Kaypro IV	1500	Aditi Sakar	324-3587
Printer	SELL Dynax DX15;w/Cable	550	Aditi Sakar	324-3587
Modem	BUY 300b - Used	Offer	Sol Krasner	962-8789

Want Ad Resale Equipment Service (continued)

ITEM	DESCRIPTION	PRICE	NAME	PHONE (or contact)
Modem	SELL Acoustic Coupler	100	Maureen Breen	962-1700
Modem	SELL Penril 300/1200b	500	Maureen Breen	962-1700
Terminal	SELL LA34 Decwriter IV	450	Maureen Breen	962-1700
Term/Modm	BUY CRT	Offer	Pam Brummett	962-8425,955-7881
Terminal	SELL Ampex Dialog-80	460	Ira Friedlander	962-1490
Printer	SELL Epson MX-80	250	Ira Friedlander	962-1490
Modem	SELL Hayes Smart	120	Ira Friedlander	962-1490
Processor	SELL CCS 2210-S100 Micro	Offer	Tom Pooley	962-6331
	SELL Attachs. for Above	Offer	Tom Pooley	962-6331
Modem	SELL Hayes Micromodem II	Offer	Tom Pooley	962-6331
Printer	SELL Okidata Microln 82A	Offer	Tom Pooley	962-6331
Terminal	SELL Televideo Modl 910 +	Offer	Tom Pooley	962-6331
PC Board	SELL APPLEIIe 80 Col Crd	80	Prof. Grossman	962-8153
System	SELL Complete Digital PC	Offer	Bruce Given	962-9653
System	SELL APPLE II + /Printer	1900	Mike McGovern	753-2607
Terminal	SELL Teleray 12M	Offer	Behrooz Hadavi	962-7809
Terminal	SELL Teleray 12M	Offer	Behrooz Hadavi	962-7809
Modem	SELL 300 Baud	Offer	Behrooz Hadavi	962-7809
Modem	SELL 300 Baud	Offer	Behrooz Hadavi	962-7809
System	SELL NBI 3000 w/Printer	Offer	Jim Rothstein	324-4588
Monitor	SELL Apple G/W 12"	80	Ralph Austen	962-8344,324-8035
Terminal	SELL Brother EP20	Offer	Mrs. Kirsner	752-4876

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the IBM 3081D, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of Superwylbur and TSO sessions is also provided. Statistics for the current month, the preceeding month, and the current month in the prior year are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs for the current month. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the current month, the preceeding month, and the current month in the prior year.

Top Twenty Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the month in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization in October 1984

SERVICE PROVIDED	IBM 3081/MVS October 1984	IBM 3081/MVS September 1984	IBM 3081/MVS October 1983
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	3:14	4:16	9:10
non-setup jobs	1:41	2:03	5:54
tape setup jobs	23:18	29:49	40.54
Total CPU-hours used	335 hrs 30 min	317 hrs 0 min	212 hrs 0 min
Superwylbur sessions	26,350	22,294	31,706
CPU hours	17 hrs 49 min	17 hrs 1 min	17 hrs 39 min
connect hours	19,454 hrs	17,716 hrs	21,862 hrs
average session	44 min	48 min	41 min
average CPU/session	2.43 sec	2.75 sec	2 sec
TSO sessions	3,409	3,032	4,693
CPU hours	4 hrs 21 min	5 hrs 19 min	6 hrs
connect hours	1215 hrs	1130 hrs	1526 hrs
average session	21 min	22 min	19 min
average CPU/session	4.60 sec	6.30 sec	4.06 sec
Jobs submitted	61,074	55,372	64,010
Steps executed	111,610	102,136	103,211

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

Top Twenty MVS Programs in October 1984

Program	Description	Percent	Count
WYLLIST	SUPERWYLBUR List Offline	9.81	11884
UCFLBL20	FILEBOL	9.65	11686
SASLPA	SAS	7.85	9509
IBMDEC	IBM/DEC link utility	4.74	5738
IEBGENER	IBM file handling utility	4.60	5573
SORT	SyncSort	4.28	5187
IEFBR14	IBM utility - null step	3.24	3930
IEWL	Linkage editor	3.23	3917
MARKYBOL	Systems utility	2.35	2844
SUCCESS	Operating Services utility	2.31	2800
FAIL	Operating Services utility	2.28	2759
BATCH204	Model 204 Utility	2.04	2467
PGM = *.DD	User defined routines	1.94	2345
SCRIPTW	SCRIPT	1.50	1820
IDCAMS	VSAM utility for catalog operations	1.38	1669
COMPUSET	Xerox text composing program	1.32	1599
SPSS	SPSS Version 9	1.21	1460
SPSSX	SPSS Version X	1.16	1407
XRXINT	XEROX Print Formatter	1.12	1352
IELOAA	PL/I Compiler	1.00	1207

CHIP - DECsystem-2060 Utilization in October 1984

Account Period	October 1984		September 1984		October 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	81.8	6059	77.0	5223	63.4	4289
EVENING	34.4	1082	29.1	703	13.8	529
OVERNIGHT	44.5	885	42.4	640	28.6	696
TOTAL	160.7	8026	148.5	6566	105.8	5514

Top Twenty Chip Programs in October 1984

Program	Description	Percent	Count
MM	Electronic mail manager	9.11	7624
OPR	Operator functions	8.21	6871
EXEC	TOPS-20 command processor	7.40	6197
MUSE	Full screen editor	5.35	4481
SYSJOB	System job controller	5.18	4341
MMAILR	Network mail daemon	5.18	4341
WATCH	Generates these statistics	5.18	4341
SYSDPY	Operator interface with job queues	5.16	4323
WINDOW	Full screen PTYCON	5.15	4311
IBMSPL	MVS link daemon	5.14	4303
SHRSRV	File transfer daemon	5.13	4296
BITNET	Off-campus electronic mail network	4.48	3755
PTYCON	Pseudo-terminal controller	3.06	2564
EMACS	Full screen editor	2.96	2482
BATCON	Batch controller	2.43	2035
SENDER	Local mail daemon	2.35	1967
SED	Full screen editor	2.04	1710
1022	Database system	1.76	1470
DEMAND	Data management system	1.70	1424
PEXEC	Test version of EXEC	1.69	1414

DALE - DECsystem-2060 Utilization in October 1984

Account Period	October 1984		September 1984		October 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	70.9	6101	51.4	4280	86.0	7022
EVENING	28.5	1875	14.0	846	37.5	2605
OVERNIGHT	40.8	4433	27.4	1091	48.3	2202
TOTAL	140.2	12409	92.8	6217	171.8	11829

Top Twenty Dale Programs in October 1984

Program	Description	Percent	Count
1022	Database system	20.71	19830
OPR	Operator functions	8.52	8159
EXEC	TOPS-20 command processor	6.53	6255
EDIT	Line editor	5.58	5345
MMAILR	Network mail daemon	4.58	4381
SYSJOB	System job controller	4.58	4381
WATCH	Generates these statistics	4.58	4381
IBMSPL	MVS link daemon	4.57	4376
SYSDPY	Operator interface with job queues	4.56	4365
WINDOW	Full screen PTYCON	4.56	4365
SHRSRV	File transfer daemon	4.27	4089
MMAILR	Network mail daemon	3.30	3161
MUSE	Full screen editor	2.83	2713
PTYCON	Pseudo-terminal controller	2.68	2564
MINITAB	Interactive statistical program	2.43	2330
SENDER	Local mail daemon	1.97	1889
EMACS	Full-screen editor	1.95	1870
DEMAND	Data management system	1.67	1598
BATCON	Batch controller	1.31	1255
SED	Full screen editor	1.30	1240

MVS Utilization in November 1984

Service Provided	IBM 3081/MVS November 1984	IBM 3081/MVS October 1984	IBM 3081/MVS November 1983
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	4:14	3:14	6:48
non-setup jobs	2:1	1:41	3:20
tape setup jobs	30:6	23:18	48:17
Total CPU-hours used	340 hrs 42 min	335 hrs 30 min	227 hrs 2 min
Superwylbur sessions	27,318	26,350	31,954
CPU hours	17 hrs 40 min	17 hrs 49 min	19 hrs 21 min
connect hours	19,714 hrs	19,454 hrs	22,468 hrs
average session	43 min	44 min	42 min
average CPU/session	2.33 sec	2.43 sec	2.18 sec
TSO sessions	3,450	3,409	4,441
CPU hours	4 hrs 43 min	4 hrs 21 min	5 hrs 16 min
connect hours	1314 hrs	1215 hrs	1566 hrs
average session	23 min	21 min	21 min
average CPU/session	4.92 sec	4.60 sec	4.27 sec
Jobs submitted	58,917	61,074	66,656
Steps executed	104,547	111,610	105,468

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

Top Twenty MVS Programs in November 1984

Program	Description	Percent	Count
WYLLIST	SUPERWYLBUR List Offline	10.76	12229
SASLPA	SAS	9.41	10695
UCFLBL20	FILEBOL	8.32	9455
IBMDEC	IBM/DEC link utility	4.83	5485
IEBGENER	IBM file handling utility	4.50	5112
SORT	SyncSort	4.18	4750
IEFBR14	IBM utility - null step	3.41	3877
IEWL	Linkage editor	2.80	3177
SUCCESS	Operating Services utility	2.49	2832
FAIL	Operating Services utility	2.46	2794
MARKYBOL	Systems utility	2.35	2676
SCRIPTW	SCRIPT	1.68	1913
PGM = *.DD	User defined routines	1.65	1879
BATCH204	Model 204 Utility	1.51	1714
IELOAA	PL/I Compiler	1.38	1574
COMPUSET	Xerox text composing program	1.21	1377
SPSSX	SPSS Version X	1.19	1352
IDCAMS	VSAM utility for catalog operations	1.15	1306
XRXINT	XEROX Print Formatter	1.09	1236
IEBCOPY	IBM utility to copy or compress a PDS	0.89	1013

CHIP - DECsystem-2060 Utilization in November 1984

Account Period	November 1984		October 1984		November 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	75.6	5858	81.8	6059	70.1	4701
EVENING	29.2	988	34.4	1082	13.8	672
OVERNIGHT	42.6	505	42.4	640	28.0	789
TOTAL	147.4	7351	148.5	6566	111.9	6162

Top Twenty Chip Programs in November 1984

Program	Description	Percent	Count
MM	Electronic mail manager	9.35	7451
OPR	Operator functions	8.41	6698
EXEC	TOPS-20 command processor	6.67	5317
SYSDPY	Operator interface with job queues	6.44	5129
SYSJOB	System job controller	5.32	4237
MMAILR	Network mail daemon	5.32	4237
WATCH	Generates these statistics	5.32	4237
WINDOW	Full screen PTYCON	5.26	4191
IBMSPL	MVS link daemon	5.26	4189
BITNET	Off-campus electronic mail network	5.25	4182
SHRSRV	File transfer daemon	5.15	4105
MUSE	Full screen editor	5.13	4088
PTYCON	Pseudo-terminal controller	2.95	2354
EMACS	Full screen editor	2.89	2301
SENDER	Local mail daemon	2.47	1967
SED	Full screen editor	1.88	1497
BATCON	Batch controller	1.80	1433
NCPCAL	Spreadsheet	1.78	1417
1022	Database system	1.68	1340
PEXEC	Test version of EXEC	1.60	1273

DALE - DECsystem-2060 Utilization in November 1984

Account Period	November 1984		October 1984		November 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	74.7	6421	70.9	6101	107.2	8614
EVENING	34.4	2221	28.5	1875	42.9	3131
OVERNIGHT	55.3	1952	40.8	1632	54.6	2469
TOTAL	164.4	10594	140.2	9608	204.7	14214

Top Twenty Dale Programs in November 1984

Program	Description	Percent	Count
1022	Database system	17.68	2626
EDIT	Line editor	9.63	1430
OPR	Operator functions	7.78	1156
EXEC	TOPS-20 command processor	6.85	1017
MMAILR	Network mail daemon	4.42	657
WATCH	Generates these statistics	4.42	657
SYSJOB	System job controller	4.42	657
IBMSPL	MVS link daemon	4.42	656
SHRSRV	File transfer daemon	3.88	577
EMACS	Full-screen editor	3.71	551
WINDOW	Full screen PTYCON	3.12	464
SYSDPY	Operator interface with job queues	3.10	461
MM	Electronic mail manager	3.04	452
MINITB	Interactive statistical program	2.54	377
PTYCON	Pseudo-terminal controller	2.45	364
SED	Full screen editor	2.38	353
MUSE	Full screen editor	1.86	276
SENDER	Local mail daemon	1.62	240
TYPE	TOPS-20 command	1.35	200
BATCON	Batch controller	1.31	195

General Information

The Computation Center serves the academic and administrative computing needs of the University of Chicago. We operate an IBM 3081D under MVS, two DECsystem-2060s (called Chip and Dale) under TOPS-20, and a Pyramid 90x under UNIX.

This *Newsletter* was produced using Superwylbur, Xset, and XICS on the IBM 3081D computer, and printed on the Xerox 9700 printer.

Quick Reference Phone Directory

Center information: days	962-7615	
Nights and weekends	962-7626	

Account Information

PCA Accounts	Usite, Wieboldt 310	5-0588
Other new computer accounts and account changes		
User billing and records information		962-7158

Advice

Programming Problems	Program Advisor	962-7624
Questions about applications	Usite, Wieboldt 310	
Suggestions,Complaints		
Program Bugs		
Refunds		
Social Science Computing Advice	Pick Advisor	962-7892
	Pick 123	

Materials and Supplies

Tape-related services		962-7614
Computing Materials	Tape Librarians	962-7614
Sales of computer supplies	Tape Librarians	962-7614
Used Equipment	Deborah Gomben	962-7615

Microcomputers and Word Processing

Consultations with new	Information	962-7174
and prospective users	Technologies and	
Office support services	New Services	
Advice on word processors,		
micros,terminals		
Microcomputer Purchases	Micro Distribution Center	962-3452

Center Services

Requests for new software and data files		962-7166
Programmer/Analyst services		962-7166
Customized Offline Printing Services		962-6081
Production jobs that require special scheduling and handling	Expediting Group	962-7602
Dataset recovery from Center backup tapes		962-7621
Data entry services		962-7604
Terminal maintenance, communications problems		962-7663

Mailing Lists and Subscriptions

Center mailing lists	962-7158
Memoranda Subscriptions	
Newsletter subscriptions	5-0588

Courses and Seminars

Questions about Center courses and seminars	Educational Coordinator	962-7173
Registration for courses and seminars which require a fee	Usite	5-0588
Registration for courses and seminars which do not require a fee		962-7153
Classroom	Harper 406	962-6014

Terminal Clusters and Equipment

Terminal Clusters	Usite Wieboldt 310
	Regenstein 201
	Abbott 602A
	Pick 123
	Crerar
Card Readers	Usite
Key Punches	Usite
Xerox 2700 Laser Printers	Usite, Pick

Documentation - On-line and Offline

Documentation	Terminal Clusters
	Usite Business Office
	Regenstein Reserve
	Harper Reserve
	Doclist - pub Doclist
	Bookstore
Notice File	MVS - pub Notice
	Chip - Notice
	Dale - Notice

Dial-up Connections

MODEM	On Campus	Off Campus
All Systems 300 Baud	5-8880	753-0980
All Systems 1200 Baud	5-8890	753-0945
IBX DOB (all switches)		
300-1200-4800 baud	5-3600	
Telenet Network Address		
300 baud	31236A	
1200 baud	31236	

Gandalf Class Codes

System	Baud Rate			
	300	1200	4800	Telenet
MVS	mvs3	mvs12	mvs48	mvstn
CHIP	chip3	chip12	chip48	chiptn
DALE	dale3	dale12	dale48	daletn

Computation Center Administration

Computation Center Director	
Carolyn D. Autrey-Hunley	962-7690
Assoc. Director, Operations and Technical Services	
John E. Iannantuoni	962-7616
Asst. Director, Instruction and Research Information Services	
Harold C. Bloom	962-7155
Asst. Director, Information Technologies and New Services	
George R. Bateman	962-7174
Asst. Director, Administrative Information Services	
David E. Trevvett	962-6018

User Group News Editor
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

Microcomputing Club Information

Please give us the following information about your User group and return by the 10th of each month for inclusion in next month's Newsletter. Mail this entire sheet to:

User Group News Editor
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

User Group Name:
_____

Your Name:
_____

Announcement:
_____

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_____

_____

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Chicago, IL 60637

Mailing List Request

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Computation Center
5737 S. University
Chicago, IL 60637

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
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_____

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UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

The University of Chicago Computation Center Newsletter is produced and printed at the Operations Site of the Computation Center, using the Xerox 9700 Laser Printers and the Xset formatting language developed by the Computation Center. Xset is a subset of XICS, Xerox Integrated Composition System. A Graphics Input Station is used to scan and digitize line images, which become image files that are merged into the document, using XICS, thereby creating the graphics.

This month's cover is a composite of images from Click Art placed on a background which was produced using MacPaint. The entire graphic was then scanned with the Graphics Input Station. See the article *Graphics Image Scanner Service Experiment* in this issue for information on having your own graphics scanned and made available for printing on the Xerox 9700s.

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GENERAL NEWS

Computation Center Class Schedule For February 1985

The Computation Center is continuing to offer a variety of short, non-credit courses and seminars which are open to the general University community. A schedule of the classes available for February 1985 follows. For a complete description of these classes please consult the *Computation Center Seminar and Course Curriculum Guide for 1984-1985* which is available at USITE. *The Curriculum Guide* also gives you recommended class sequences to take for different subject areas and lets you plan which Center classes you want to take during the year. PLEASE NOTE THAT NOT ALL CLASSES ARE OFFERED EVERY QUARTER AND YOU MUST CONSULT THE GUIDE TO PLAN YOUR CLASSES ACCORDINGLY. Each seminar and course has an identification number associated with it in order to simplify course selection and registration. Each seminar and course also may have prerequisite classes listed for it. The prerequisite classes, or equivalent knowledge of the material that they cover, are essential to understanding the topics covered in the classes dependent on them. Class instructors work from the assumption that you will have attended the appropriate prerequisite classes or already understand the subjects discussed in those classes. To make effective use of the classes that the Center provides you need to take classes in the sequences suggested in the *Curriculum Guide*.

In addition to the quarterly seminars and courses taught in a classroom setting, the Center also provides videotaped training sessions. More information on video classes can be found in the *Curriculum Guide*.

Registration is required for all courses. Many seminars also require registration. Although many seminars are free of charge, there is a fee for some seminars and courses. It may be paid in cash, charged to a Computation Center billable project (Student and Faculty Personal Computing Accounts, PCA's, are not billable projects), or paid with a University 62 form. A refund will be made if the registrant requests one before the start of the second session of the course in question. All seminars and courses which fail to meet minimum enrollments listed are subject to cancellation. Registrants will be notified if a class is cancelled.

Those interested in registering for courses may do so in person at the Computation Center Usite Business Office, in Wieboldt 310, from 9:00 a.m. to 4:00 p.m., Monday through Friday. Seminar registration is handled differently; consult the class schedule listings below for information. Anyone wishing further information concerning the topics and content of these seminars and courses should examine the *Computation Center Seminar and Course Curriculum Guide for 1984-1985* or contact the Center's Educational Coordinator, Don Crabb, at 962-7173 (or via DEC-20 MM to STAFF.DONCRABB).

Note: All classes are held in the Computation Center Classroom, Harper 406.

Please note that the seminar, INTRODUCTION TO THE USE AND DEVELOPMENT OF COURSEWARE ON THE APPLE MACINTOSH, has been cancelled.

February 1985 Seminars

CC130 - INTRODUCTION TO MAGNETIC TAPE STORAGE

Telephone registration is required for this seminar. Phone 962-7153 to register.
Minimum Enrollment: 10

Maximum Enrollment: 52
Date and Time: Friday, February 1, 3:30 - 5:00
Prerequisites: CC105, CC110, CC205, CC210, or equivalent knowledge.
Instructor: Judy Curry

CC300 - INTRODUCTION TO MICROCOMPUTING (Three Parts)

Registration is required for this seminar. Register at the Usite business office by Friday, February 1.
Minimum Enrollment: 10
Maximum Enrollment: 52
Dates and Times: Monday, Wednesday, and Friday, February 4, 6, and 8, 3:30 - 5:00
Cost: $20.00
Prerequisites: None
Instructors: Martha Ash and Don Crabb

CC460 - INTRODUCTION TO MUSE WORD PROCESSING ON THE DECSYSTEM-20s (Three Parts)

Dates and Times: Monday, Wednesday, and Friday, February 4, 6, 8, 1:00 - 2:30
Prerequisites: CC210, or equivalent knowledge.
Instructor: Arlene Brown

CC470 - TYPESETTING EMULATION WITH XSET

Telephone registration is required for this seminar. Phone 962-7153 to register.
Minimum Enrollment: 10
Maximum Enrollment: 52
Date and Time: Tuesday, February 5, 3:30 - 5:00
Prerequisites: CC400, CC205, or equivalent knowledge.
Instructor: Joan McGrane

CC630 - INTRODUCTION TO SAS/GRAPH (Two Parts)

Telephone registration is required for this seminar. Phone 962-7153 to register.
Minimum Enrollment: 10
Maximum Enrollment: 52
Dates and Times: Tuesday and Thursday, February 5 and 7, 10:30 - 12:00
Prerequisites: CC205 and CC530, or equivalent knowledge.

Instructor: Jim Lichtenstein

CC310 - MICROCOMPUTER DATA COMMUNICATIONS

Date and Time: Monday, February 11, 3:30 - 5:00
Prerequisites: CC105 and CC300, or equivalent knowledge.
Instructor: Martha Ash

CC452 - EMACS FULL SCREEN EDITING ON THE DECSYSTEM-20s AND PYRAMID/-UNIX

Date and Time: Tuesday, February 12, 1:00 - 2:30
Prerequisites: CC210 and CC220, or equivalent knowledge.
Instructor: Al Schultz

CC560 - SOCIAL SCIENCE DATA RESOURCES: HOW TO LOCATE AND ACCESS THEM

Telephone registration is required for this seminar. Phone 962-7153 to register.
Minimum Enrollment: 10
Maximum Enrollment: 52
Date and Time: Wednesday, February 13, 3:30 - 5:00
Prerequisites: None
Instructor: Melissa Trevvett

CC910 - CONNECTING WITH THE UNIVERSE: HOW TO USE ELECTRONIC MAIL TO CONTACT COLLEAGUES ACROSS THE GLOBE

Registration is required for this seminar. Register at the Usite Business Office by Thursday, February 14.
Cost: $5.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Date and Time: Friday, February 15, 3:30 - 5:00
Prerequisites: CC105, CC210 or equivalent knowledge.
Instructor: Don Crabb

February 1985 Course

CC520 - Introduction to SPSSX (6 Parts)

Registration is required for this course. Register at the Usite business office by

Monday, February 11.
Dates and Times: Tuesdays and Thursdays, February 12 - February 28, 5:30-7:00
Cost: $30.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC205, or equivalent knowledge.
Instructor: John Raz

Microcomputers Available At Public Clusters

There are now six microcomputers located at public terminal sites -- two IBM PCs at Pick, two Macintoshs at USITE, and two Macintoshs at Crerar. These microcomputers may be used by faculty, staff, and students with valid University identification and valid microcomputer access cards.

Access cards must be purchased at the USITE Business Office using cash, or, if you are authorized, by charging the cost to a valid MVS Logon-Id. Note that Personal Computing Accounts (PCAs), subsidy research accounts, and class accounts cannot be used to pay for microcomputer use. The charge is $2.00 per hour and each access card shows the amount of time that was purchased.

In order to use a microcomputer at these sites, give your access card and University identification card to the cluster assistant at Pick or USITE. The assistant will attach the keyboard to the micro and will provide you with the program diskettes. At Crerar, the keyboards and program diskettes are obtained from the reserve desk. You will have to attach the keyboard yourself.

When you are done, or when you run out of time on your access card, the assistant will detach the keyboard from the micro, mark the time used on your access card, and return the access and identification cards to you. At Crerar, you will have to detach the keyboard and return everything to the reserve desk.

Although the operating systems and some selected programs will be provided, you will have to provide your own diskettes for saving data or programs. Blank diskettes for the Macintosh are sold at the Microcomputer Distribution Center, 1307 E. 60th Street, which is open from 10:00 a.m. to 4:00 p.m., Monday through Friday. The phone number is 962-3452. Blank diskettes for the IBM PC can be purchased from the University Bookstore.

Each of the two IBM Personal Computers located at the Social Science terminal cluster in Pick 123 has 640K of memory and two 320K double-sided disk drives. There is also an Okidata graphics printer which may be switched between the two IBM PCs. This equipment was purchased by the Division of Social Sciences with the understanding that it could be used by the University community.

Software installed on these IBM PCs includes the DOS (Diskette Operating System), BASIC, BASICA (Advanced Basic), and WordMarc (Muse for microcomputers). There is also a tutorial program which helps people learn how to use the equipment.

The microcomputers are connected to communications lines, and a program called Kermit allows files to be transferred between the IBM PCs and the Computation Center's DEC 2060s or IBM 3081.

The software for the Macintoshs located at USITE and Crerar includes MacWrite and MacPaint. These microcomputers are also connected to communication lines, and MacTerminal is the program that allows files to be transferred between micro- and mainframe computers.

Changes In Contract Programming Support

The Computation Center's "for-hire" programming support has been reorganized. There is no longer an "Information Systems" group per se. The functions of this group have been taken over by Administrative Information Services (A.I.S.), of which Information Systems was a part.

A.I.S. will continue to provide analysis, design, programming, testing and production maintenance services, but mostly on a long-term basis, with a mutual commitment of support for a minimum period of 6 months. Those users desiring on-going programming services, but needing less than a full-time programmer, should call A. I. S. to see if such support can be arranged.

Customers whose production system problems have been handled by Information Systems in the past are still being supported while long-term arrangements are made.

We regret any inconvenience to our customers caused by these changes. Individuals and groups desiring additional information or seeking programming and analysis assistance for administrative-type applications should contact David Trevvett, Assistant Director for Administrative Information Services, at 962-6018.

Graphics Image Scanner Service Experiment

Over the next two months the Center will be testing customer demand for scanned graphics printed on the Xerox 9700 laser printers. If you have graphics, department letterheads, logos, etc., and you would like them printed on the Xerox 9700 laser printers, please contact Charles Hodge at 962-6081.

The text and graphic images appearing on the cover and inside pages of the last few issues of the Computation Center's *Newsletter* are illustrative examples of the quality and display capability of the Xerox 9700 printing system.

During the trial period, the Center will scan customer's graphics for approximately $15.00 per image. Graphics once scanned will be stored on customer - supplied tapes. The initial printing of scanned graphics will require custom print procedures. But with reasonable demand for the service, public on-line procedures for text and graphics printing will be made available.

Choosing An Electronic Mail Network

Electronic mail is a convenient way to communicate with friends and colleagues around the world. Like any mail system, you must know the name and address of the person to whom you wish to send mail. In addition, since the Computation Center's computers are connected to a number of different networks, there is the choice of which network will carry the mail.

A good analogy for electronic mail is the current state of long distance telephone service. Before picking up the phone, you must first decide which long distance service you will use, i.e. MCI, AT&T, SPRINT, ITT, etc. This corresponds to choosing an electronic mail network. Like the long distance services, some places can be reached by all the networks, others by only one network. In general you should choose the network which best fits your particular needs.

Choosing a Network

Bitnet, with nearly 600 nodes or host computers, is the largest of the computer networks available at the Computation Center. It is available from all four of the Computation Center computers and is currently free to the user (imagine free long distance calls!). The combination of these factors makes it the network of choice in most cases. For a list of Bitnet sites use one of the following commands: on Chip or Dale, enter:

@type notes:bitnet-hosts

on the pyramid enter:

%cat /usr/man/bitnet-hosts

Mailnet is a somewhat smaller network which is only available on the DEC-20s at this time. Some sites which cannot be reached directly by Bitnet can be reached by Mailnet. However, a small charge is involved with each use of Mailnet. For a list of Mailnet sites, and more information, type:

@notes:mailnet

UUCP is a specialized network of UNIX machines. Its mail-handling capacities can only be used from the Computation Center UNIX machine, Sphinx. UUCP is very different from the above networks in that you must not only know what machine you are sending to, but you must specify the path along which the message will travel, somewhat like specifying the names of each rider for a message delivered by Pony-express. The result of this is that even though Sphinx talks to only seven local machines, there are thousands of UNIX machines which can be reached, provided you know the path to them (see *Sphinx Joins The Network* in this issue). In general, any large UNIX machine in a university environment can be reached by UUCP provided you are willing to look long enough for a path. Because UUCP addresses differ from the other networks, it will not be discussed below. See the November 1984 *Newsletter* for more information.

Choosing a Machine

If you already use one of the Computation Center machines, your choice is easy. Since all of the Computation Center machines are connected to networks, use the machine with which you are most familiar. However, if you are a new user, or you are familiar with more than one Computation Center machine, then it is worth considering the merits of the various machines.

If your expected correspondents are at a site served by Bitnet or Mailnet, then the machine of choice is a DEC-20. The DEC-20s support the most powerful electronic mail user interface, the MM (Mail Manager) program. MM provides management capabilities such as control of incoming messages and powerful editing functions on outgoing messages, including spelling correction. See Memo 2006 for a start with MM.

If your expected correspondents are at a site served only by UUCP, then you must use the Pyramid UNIX system. The command *man mail* will get you started with UNIX mail.

For those who prefer the power of the largest mainframe, the BITNET command is now available under TSO on the IBM 3081. There is also a SUPERWYLBUR public macro, PUB NETMAIL available on the 3081. However, there is no management system for mail on the IBM like the MM program on the DECs.

Addressing Electronic Mail

Fully specified, an electronic mail address takes the following format:

user@host.network

Using the telephone analogy, the network is the name of the carrier that you have chosen, in our case Bitnet or Mailnet. The host is the name of the host computer or, analogously, the area code. Finally, the user is the user-name on that system belonging to your correspondent or his phone number.

Just as it is sometimes necessary to specify an extension number to the university operator when calling an individual, it is sometimes necessary to supply the equivalent in an electronic mail address. In particular, although Sphinx is not a node on

Bitnet, it is possible to send mail to Sphinx from another Bitnet site by first addressing it to the host UChicago and then adding Sphinx's extension. This takes the following format:

user%extension@host.network

Using this syntax, the example below illustrates how a message is sent to a user on Sphinx from another Bitnet site, say Columbia:

person-id%sphinx@uchicago.bitnet

or to Chip

dec-username%chip@uchicago.bitnet

MVS (UCHIMVS1) is a Bitnet host and does not require the extension:

logon-id@UCHIMVS1.Bitnet

Note: DEC-usernames constitute the mail address on the DECs, person ids on the Pyramid and logon-ids on the IBM.

The use of the "%" extension can be very useful. All of the computers on campus which support electronic mail constitute the UChicago electronic mail domain, so the above example addressed to the user on Sphinx uses Bitnet to get to Chicago and then the UChicago domain to get to Sphinx.

This use is not limited to Sphinx. To reach the Astronomy VAX, Oddjob, for example, the Bitnet address would be

oddjob-user%oddjob@uchicago.Bitnet

In summary, electronic mail at the Computation Center and on campus is rapidly evolving with new features, capabilities and hosts being added every month. As one would expect in such an environment, use of the newest features and host often requires a great deal of patience since stability can only be acquired with time and experience.

— *Todd Nugent*

Business Office Hours Change

The hours of the Business Office at 1313 E. 60th have been changed to 8:30-12:00 and 12:30-4:30, Monday through Friday.

Please note that this Business Office no longer handles walk-up business. Most users will be able to conduct their business at the USITE Business Office (Wieboldt 310).

DATA RESOURCES

— Melissa Trevvett

New Edition Of The ICPSR Guide Available

The Inter-university Consortium for Political and Social Research (ICPSR) has recently issued the new edition of its catalog of data collections. The Consortium disseminates machine-readable data in the social sciences and its *Guide to Resources and Services 1984-1985* lists brief descriptive information about all the studies that it distributes. Any study distributed by ICPSR is available to faculty, students, and staff--nearly always for free. For more information about the catalog or data that ICPSR distributes, call Melissa Trevvett, 962-6092.

Courses Of Special Interest To Social Science Data Users

The Computation Center is offering two courses in February which will be of special interest to users of social science data. They are:

CC520 - INTRODUCTION TO SPSSX (6 Parts)
Tuesdays and Thursdays, Feb. 12-28
Registration is required for this course. Register at the USITE Business Office by Monday, February 11.
Time: 5:30-7:00
Location: Harper 406
Cost: $30.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC205, or equivalent knowledge
Instructor: John Raz

CC560 - SOCIAL SCIENCE DATA RESOURCES: HOW TO LOCATE THEM, HOW TO ACCESS THEM
Feb. 13, 1985 from 3:30-5:00.
Telephone registration is required for this seminar. Phone 962-7153 to register.
Minimum enrollment: 10
Maximum enrollment: 52
Prerequisites: None
Location: Harper 406
Instructor: Melissa Trevvett

This seminar will identify sources for data and for information about data; it will include both on-and off- campus sources. In addition, the seminar will focus specifically on how to access data that the University of Chicago obtains from the Inter-university Consortium for Political and Social Research (ICPSR), briefly covering the SPSS-X and SAS interfaces that allow users to prepare an SPSS-X system file or a SAS data set from ICPSR data.

Please see *Computation Center Class Schedule For February, 1985* in this issue for details on other classes being offered this month.

MVS

TSO Has A Friendly New PDS Facility

Anyone who uses TSO will want to experiment with the PDS command. PDS is an interactive general dataset manipulation facility that can be used with sequential as well as partitioned datasets.

To use PDS, logon to TSO, and at the READY prompt enter:

PDS dataset-name

The PDS or individual members are automatically available for your work. Many subcommands are at hand within the PDS environment, and a task may often be performed with only a single keystroke.

Of course, you may list PDS members and their attributes, edit, rename or alias them and more very easily. There are 34 subcommands to explore within PDS, plus excellent online HELP.

PDS offers users a few tools which may be used infrequently, but are well worth knowing about because they are unique and unsurpassed.

PDS members accidentally deleted may be resurrected via the RESTORE subcommand. All deleted members are accessible this way until the PDS is compressed. FIXPDS provides absolutely the easiest way to modify the DCB characteristics of a PDS or to expand the directory -- with only a single typed line.

If you work with a load library and decide that a member should be declared re-entrant, ATTRIB can do it dynamically; or a listing of the CSECT structure may be obtained immediately by using the MAP subcommand.

The TSO PDS facility is documented in the manual *Effective Use of the TSO PDS Command* (R147). It is available for perusal in the clusters and in the reserve reading rooms. It is also available through DOCLIST as PDSINTSO.

PYRAMID/UNIX

Are You Interested in Learning What UNIX Can Do?

The UNIX environment on the Pyramid offers built-in convenience and some unique applications programs for our academic users. UNIX does away with JCL enjoyably and, once the hurdle of becoming accustomed is passed, UNIX provides an efficient workplace for users who need the programs that system provides.

These programs include the C programming language; S, an interactive statistical and graphics package, Franz LISP (the subject of its own article in this *Newsletter*), and the TROFF printing environment which allows text to be positioned anywhere on a page quite accurately and in a variety of styles and point sizes.

A Center-written manual, *UNIX on the Pyramid* (R153), is available for perusal at all clusters and reserve reading rooms and may be ordered through DOCLIST (on MVS or the DEC) as UOFCUNIX. This is a very brief guide designed to help beginning users get started on the Pyramid.

Part of the UNIX philosophy is to have online documentation, so most features can be explored via online help. The man command displays information at the terminal. For example,

% man man ('%' is the system prompt)

displays all the features of the man command.

% man -k tape

will display a list of all commands that pertain to tape processing, however vaguely. The *-k* switch is useful when you don't really know the name of the command you're looking for.

Individual online manual pages may be printed (beautifully!) on the Talaris printer. Don't print more than a manual command or two for your own use, because printing from the Talaris is done on one side of the page only, and a large amount of such printing is unwieldly and relatively expensive.

The online documentation is kept in an unformatted form in the directory /usr/man. The *ls* command will help you display any directory's contents. To print a document, use the *qtroff* command. For example, to print the man page for qtroff itself:

%qtroff -man /usr/man/man1/qtroff.1

An out-of-stock problem with the publisher for the Berkeley UNIX manuals has delayed their appearance at our terminal clusters. We hope that they will have arrived by the publication date of this *Newsletter*. Here is a summary of the status of the printed vendor documentation:

EMACS for the Pyramid is available for reading at most clusters and reserve reading rooms. The vendor is still working on this manual. We obtained permission to use this draft copy for your perusal until a final copy is available. It is R161 in the manual racks, and is XY2732 at Regenstein Reserve, or XR161 at Harper Reserve.

A complete set of the Berkeley Documentation is at Regenstein Reserve. The manuals are:

UNIX User's Guide (R156) YX2727
UNIX User's Guide Supplement (R157) YX2728
UNIX Programmer's Guide (R158) YX2729
UNIX Programmer's Guide Supplement (R159) YX2730
UNIX System Manager's Manual (R160) YX2731

The *User's Guide Supplement* documents text-formatting fairly thoroughly. The *UNIX Program-*

mer's Guide Supplement, which is also at the terminal clusters, documents Franz LISP.

By the publication date of this *Newsletter*, documentation for AT & T's System V UNIX will be at all library reserve reading rooms, and the manual for S, called *S, An Interactive Environment for Data Analysis and Graphics* by R.A. Becker and J.M. Chambers will be available at our clusters for perusal, and for purchase at the University Bookstore, 950 E. 58th St.

Sphinx Joins the Network

Our Sphinx machine has recently joined the USENET (User's Network). USENET is an international electronic bulletin board that is shared among many computer systems in the computer science community. There are upwards of two thousand computers on the network. Most of them are either part of University communities or part of Bell Laboratories, but recently many other types of organizations have joined the network.

An electronic bulletin board, like its traditional, cork-surface counterpart, is simply a medium for posting information. One of the main differences though is that an electronic bulletin board can exist in a thousand places as easily as in one. Through the medium of the UUCP intermachine network, information can be "posted" on the bulletin board by any participating site and copies of the updated bulletin board can be constantly propagated among the participating computers.

The contents of the "postings" on USENET are spread across a vast range of subjects. A sampling of interests includes:

a wide range of computer issues such as micro to mainframe hardware, software, and communications; specific computer language discussions; new

product discussions; computer architecture; etc

a variety of technological pursuits, including artifical intelligence, cognitive engineering, analog design, the space shuttle, and natural languages

academic disciplines, such as astronomy, mathematics, philosophy and physics

individual avocations, such as amateur radio, cooking, gardening and a variety of other hobbies

social and personal issues, like politics, religion, and women's rights

appreciation for music, movies, poetry and television

various other interests, such as items for sale, discussions on sports and games of all descriptions

Although the USENET bulletin board is vast its contents are organized, and may be perused, by category or "newsgroup". A listing of all current newsgroup categories can be obtained by the *newsgroups* command on sphinx

So how does one "read the news?" The commands to read USENET are all documented in the online manual. They are:

readnews - this is the command for reading USENET

checknews - this command can be used to see if new news has been posted in the newsgroups of your interest (you have to have a subscription list first - see readnews)

postnews - this is the command for posting your own article

A suggestion for reading the news for the first time is:

1. Read the documentation by using the command *man readnews*.

2. Execute the *newsgroups* command to get an idea of the range of news categories.

3. Take some time and execute the command *readnews -n all*. This will send you through all the currently posted news and build a .newsrc file (see the man page for newsrc). This file keeps track of articles you've read and newsgroups that you've "unsubscribed to" so redundant and unwanted articles won't be read by default.

USENET currently gets anywhere from 0 to 500 new postings a day. These postings are available for nine or ten days and are then deleted to make room for new postings. This period of time can vary somewhat depending on how crowded the disk becomes. Reading USENET is an easy and fun way to communicate with others who have similiar (and different) interests.

— Pete Davis

Franz LISP Now Available On The Pyramid

Franz LISP has been added to the available software on the Sphinx.

Franz LISP is an interpreter for a LISP dialect which closely resembles MIT's MACLISP. It was designed at the University of California at Berkeley for research in symbolic and algebraic manipulation, artificial intelligence and programming languages. It has facilities for arrays, user-defined structures and a user- controlled reader with character and word macro capabilities. Franz LISP is capable of running large LISP programs in a timesharing environment, and can interact directly with compiled LISP, C, Fortran and Pascal code.

On the Pyramid, the *man LISP* and *man bigLISP* commands will provide additional information about this new applications software.

TOPS-20

LISTOFF Simplifies Printing From The DECs

LISTOFF, a new program on the DECs, simplifies printing DEC files on the MVS printers by prompting the user for all the necessary parameters, providing appropriate defaults, disallowing invalid responses, and offering help either as a list of allowable answers for any prompt or an explanation of what the prompt is asking for.

To use this program, simply enter

LISTOFF

in response to the @ prompt. The first prompt after that is for the name of the file you want to print. Next come prompts for such parameters as which printer to use, how many copies to print, etc.

When you don't know how to respond to a prompt you may enter either "?" which displays the set of valid responses, or "help" which explains how the parameter being prompted for affects the printing. Unique abbreviations and escape recognition are available, as is the LOOK option which lets you stop the prompting sequence and examine the values set for each parameter being used. After doing a LOOK you can either print with parameter values just displayed, specify single parameters whose val-

ues you wish to be prompted or re-prompted for, or resume the regular prompting sequence from where you left off.

Users of the Xerox 9700s should find LISTOFF especially useful since there are so many options to select from when using that device. It is often easy to forget one or more of them when submitting a PRINT command in the MVS program.

Two More Printer Numbers Defined In MUSE

Until now there have been only two valid printer numbers for Muse printing options. If the printer number is set to '0' on the PRINTING OPTIONS screen, Muse will print a straight file that could be listed off any line printer. If the printer number is set to '2', Muse will prompt for the printing device to be used, such as 97MF or 27P. Even if the document is refiled with the printer number set to '2', saving this information only causes Muse to prompt for the correct printing device when the file is next queued for print.

You may now store more specific printing information with your document. Printer number 3 is now recognized by Muse as 97MF, or the printer driver used for files which will be run through MUSE97 to print off the 9700 using multiple fonts. Printer number 4 is now recognized by Muse as 27P, or the printer driver used for files to be printed off the 2700s in portrait format. The advantage of using these printer numbers is that Muse recognizes the printing device and needn't prompt for that information each time the file is queued to print.

You may still choose printer number 2 and specify either printer driver (97MF or 27P) when prompted by Muse just as had been done in the past. For

printer drivers 27L and MRGE, you MUST choose
printer number 2 and answer the prompt.

Limited Locations For Some Software

For a variety of reasons, including costs, not all
software is available on both Chip and Dale. The
following matrix lists such software limited to one
DEC.

Software	Chip	Dale
UUCP	Y	N
BBoards (special purpose)	Y	N
SPSS-X	N	Y
IDA	N	Y
Kom	Y	N
Macsyma	Y	N

MICROCOMPUTING

MDC Will Offer HP, IBM, and Zenith Hardware and Software

Full-time University faculty, staff, students, and University departments will be able to purchase selected hardware and software manufactured by Hewlett Packard, IBM and Zenith through the Microcomputer Distribution Center, 1307 East 60th Street. These new products will be offered in addition to the Apple hardware and software which has been available. Price lists will be available on or by February 11 at the Distribution Center, USITE (Wieboldt 310), and the Computation Center Staff Offices, 5737 S. University. For further information contact David Huber at 962-3452.

Demonstration and Development Lab Offers Extra Services

The Demonstration and Development Lab at 5737 S. University is now offering additional services to University microcomputer users. Equipment use, professional programming assistance, and custom programming are available for a fee.

The Lab has a number of microcomputers, printers, and plotters from various manufacturers. A wide variety of software is also available. Some of the hardware and software is owned by the Computation Center and some is on loan from the manufacturers for demonstration purposes. The MICLAB program on the DECs provides an up-to-date listing of hardware and software available in the Lab.

Equipment Use for Special Projects

The equipment in the Lab can be reserved and used for short term projects such as printing or reformatting diskettes, uploading or downloading files, routing files to the Xerox 9700s. It can also be used for testing your data on a particular configuration before purchasing equipment or completing a small project when your equipment is being repaired or your roommate has departed with his or her PC. The fee for equipment use is $10.00 per hour, or $26.00 if you require assistance. Call 962-7151 to speak with Lab personnel about your particular project. If the project is reviewed and found to be a long-term project, equipment can still be reserved if resources permit. Call Dorothy Raden at 962-7453 to discuss long-term projects.

Professional Programming Assistance - On or Off Site

Professional programming assistance is available in many areas. Lab staff can provide technical assistance for microcomputers and microcomputer communications. Other assignments can include such activities as helping to set up a microcomputer lab or installation, and equipment configuration. We can also provide an introduction to the equipment.

Custom Programming

Custom programming, basic microcomputer systems design, and installation assistance is available for short term projects. Longer term projects will be referred to the appropriate Computation Center department. The fee for programming assistance of any kind through the Lab is $26.00 per hour. Short term group training sessions will be available as an additional Computation Center Service. For more information, call 962-7151 to discuss your needs

with Lab personnel.

MICLAB Program's Capabilities Expanded

A new command has been added to the MICLAB program that allows users to get a list of hardware and software that has been added to the Demo lab in the last week or month. To use the MICLAB program enter:

MICLAB

in response to the TOPS-20 prompt on either DEC-20. To use the new feature enter "N" in response to the "Enter requests or E to exit:" prompt. The program will then prompt for "M" or "W" for additions in the last month or week.

New Hardware And Software In the Demo Lab

The following hardware and software has been added to the Demonstration and Development Lab at 5737 S. University. For an appointment to see any of this equipment, call 962-7151.

New hardware includes the IBM AT system, with the Intel 80286 processor, 512K Ram; 1 20MB Fixed Disk, 2 Quad density 1.2 MB floppy disk drives, and an IBM Color Monitor.

Also available are a Hewlett Packard P7425 Plotter, Tekalike Graphics Terminal 4014 emulation v 3.0 for the Lisa, and MacPublisher (pre-release) Word-processor for producing multiple-column output on the Macintosh.

DEPARTMENTS

People

Changes within the Center:

Stanley Fenster, Sr. Computer Engineer for Communications Services, has left the Center.

The following people from Information Systems have also left the Center: **Mark Shapiro**, Jr. Programmer/Analyst I, **Clara Kelly**, Jr. Programmer/Analyst I, **Helen Sexson**, Documentation Librarian, and **Victor Yipp**, Project Manager.

Jon Duringer, Programmer/Analyst for Information Systems, resigned to move to California.

Mary Basham, Receptionist III for Business Services and **Blair Gifford**, Computer Cluster Assistant, have left the Center.

Robert Thompson, former Computer Cluster Assistant, is now a Stock Clerk at the Microcomputer Distribution Center. **Wes Cowell** and **Juan Fernandez** are now Stock Clerks at the Microcomputer Distribution Center.

Catherine Kosto has been promoted to Secretary III and is now assisting Instruction and Documentation Services, Applications Systems, and Information Technologies and New Services. **Joyce Morris**, Secretary II, is now located at the main floor desk at 5737 S. University.

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the IBM 3081D, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of Superwylbur and TSO sessions is also provided. Statistics for the current month, the preceeding month, and the current month in the prior year are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs for the current month. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the current month, the preceeding month, and the current month in the prior year.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the month in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization in December 1984

Service Provided	IBM 3081/MVS December 1984	IBM 3081/MVS November 1984	IBM 3081/MVS December 1983
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	4:58	4:14	6:47
non-setup jobs	2:04	2:01	3:14
tape setup jobs	37:34	30:06	52:14
Total CPU-hours used	329 hrs 0 min	340 hrs 42 min	200 hrs 0 min
Superwylbur sessions	21,343	27,318	25,107
CPU hours	15 hrs 3 min	17 hrs 40 min	15 hrs 19 min
connect hours	16,460 hrs	19,714 hrs	18,956 hrs
average session	46 min	43 min	45 min
average CPU/session	2.54 sec	2.33 sec	2.20 sec
TSO sessions	2,806	3,450	3,932
CPU hours	3 hrs 21 min	4 hrs 43 min	5 hrs 26 min
connect hours	1137 hrs	1314 hrs	1472 hrs
average session	24 min	23 min	22 min
average CPU/session	4.31 sec	4.92 sec	5.00 sec
Jobs submitted	52,807	58,917	58,473
Steps executed	95,927	104,547	98,470

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

Top Twenty MVS Programs in December 1984

Program	Description	Percent	Count
WYLLIST	SUPERWYLBUR List Offline	10.47	10987
UCFLBL20	FILEBOL	8.62	9048
SASLPA	SAS	8.07	8471
IBMDEC	IBM/DEC link utility	4.72	4953
SORT	SyncSort	4.49	4711
IEBGENER	IBM file handling utility	4.10	4309
IEFBR14	IBM utility - null step	3.34	3502
SUCCESS	Operating Services utility	2.85	2989
FAIL	Operating Services utility	2.82	2956
MARKYBOL	Systems utility	2.71	2848
IEWL	Linkage editor	2.33	2445
IDCAMS	VSAM utility for catalog operations	1.62	1703
BATCH204	Model 204 Utility	1.53	1611
SCRIPTW	SCRIPT	1.38	1454
PGM = *.DD	User defined routines	1.33	1392
SPSSX	SPSS Version X	1.18	1244
IELOAA	PL/I Compiler	1.16	1216
COMPUSET	Xerox text composing program	1.05	1101
IGIFORT	FORTRAN G compiler	1.00	1046
XRXINT	XEROX Print Formatter	0.96	1003

CHIP - DECsystem-2060 Utilization in December 1984

Account Period	December 1984		November 1984		December 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	64.6	4580	75.6	5858	59.7	4122
EVENING	27.2	779	29.2	988	11.6	571
OVERNIGHT	36.4	811	42.6	505	31.0	552
TOTAL	128.2	6170	147.4	7351	102.3	5245

Top Twenty Chip Programs in December 1984

Program	Description	Percent	Count
EXEC	TOPS-20 command processor	8.68	5887
OPR	Operator functions	8.31	5636
MM	Electronic mail manager	7.73	5241
SYSDPY	Operator interface with job queues	6.12	4151
MUSE	Full screen editor	5.49	3721
WATCH	Generates these statistics	5.43	3682
SYSJOB	System job controller	5.43	3681
MMAILR	Network mail daemon	5.43	3681
SHRSRV	File transfer daemon	5.43	3680
WINDOW	Full screen PTYCON	5.35	3628
IBMSPL	MVS link daemon	5.28	3583
BITNET	Off-campus electronic mail network	5.18	3513
EMACS	Full screen editor	3.58	2425
PTYCON	Pseudo-terminal controller	2.93	1987
SENDER	Local mail daemon	2.36	1603
BATCON	Batch controller	1.91	1297
NCPCAL	Spreadsheet	1.74	1181
1022	Database system	1.73	1175
SED	Full screen editor	1.25	846
DEMAND	Data management system	1.20	815

DALE - DECsystem-2060 Utilization in December 1984

Account Period	December 1984		November 1984		December 1983	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	67.5	5024	74.7	6421	87.7	7148
EVENING	33.5	1707	34.4	2221	26.1	1970
OVERNIGHT	47.1	1700	55.3	1952	44.7	1859
TOTAL	148.1	8431	164.4	10594	158.5	10977

Top Twenty Dale Programs in December 1984

Program	Description	Percent	Count
1022	Database system	17.97	16440
OPR	Operator functions	9.02	8256
SYSDPY	Operator interface with job queues	5.46	5000
EXEC	TOPS-20 command processor	5.26	4809
SYSJOB	System job controller	4.69	4294
WATCH	Generates these statistics	4.69	4294
MMAILR	Network mail daemon	4.69	4293
WINDOW	Full screen PTYCON	4.69	4288
IBMSPL	MVS link daemon	4.68	4286
SHRSRV	File transfer daemon	4.62	4223
EDIT	Line editor	4.38	4012
EMACS	Full-screen editor	3.93	3595
MUSE	Full screen editor	3.73	3416
MM	Electronic mail manager	2.78	2543
PTYCON	Pseudo-terminal controller	2.67	2443
SED	Full screen editor	2.34	2141
SENDER	Local mail daemon	1.79	1642
SCSS	Conversational SPSS	1.72	1574
BATCON	Batch controller	1.40	1285
MINITB	Interactive statistical program	1.11	1012

General Information

The Computation Center serves the academic and administrative computing needs of the University of Chicago. We operate an IBM 3081D under MVS, two DECsystem-2060s (called Chip and Dale) under TOPS-20, and a Pyramid 90x under UNIX.

This *Newsletter* was produced using Superwylbur, Xset, and XICS on the IBM 3081D computer, and printed on a Xerox 9700 printer.

Quick Reference Phone Directory

Center information: days	962-7615
Nights and weekends	962-7626

Account Information

PCA Accounts	Usite, Business Office	962-7158
Other new computer accounts and account changes		962-7158
User billing and records information		962-7159

Advice

Programming Problems	Program Advisor	962-7624
Questions about applications	Usite, Wieboldt 310	
Suggestions,Complaints		
Program Bugs		
Refunds		
Social Science Computing Advice	Pick Advisor	962-7892
	Pick 123	
Demo and Dev. Lab	5737 University	962-7151

Materials and Supplies

Tape-related services		962-7614
Computing Materials	Tape Librarians	962-7614
Sales of computer supplies	Tape Librarians	962-7614
Used Equipment	Deborah Gomben	962-7615

Microcomputers and Word Processing

Consultations with new and prospective users	Information Technologies and	962-7174
Office support services	New Services	
Advice on word processors, micros,terminals		
Microcomputer Purchases	Micro Distribution Center	962-3452

Center Services

Requests for new software and data files		962-7166
Programmer/Analyst services		962-7166
Custom Print Services		962-6081
Production jobs that require special scheduling and handling	Expediting Group	962-7602
Dataset recovery from Center backup tapes		962-7621
Data entry services		962-7604
Terminal maintenance, communications problems		962-7663

Mailing Lists and Subscriptions

Center mailing lists		962-7159
Memoranda Subscriptions	Usite Business Office	962-7158
Newsletter subscriptions		962-7159

Courses and Seminars

Questions about Center courses and seminars	Educational Coordinator	962-7173
Registration for courses and seminars which require a fee	Usite Business Office	962-7158
Registration for courses and seminars which do not require a fee		962-7153
Classroom	Harper 406	962-6014

Terminal Clusters and Equipment

Terminal Clusters	Usite Wieboldt 310
	Regenstein 201
	Abbott 602A
	Pick 123
	Crerar
Card Readers	Usite
Key Punches	Usite
Xerox 2700 Laser Printers	Usite, Pick

Documentation - On-line and Offline

	Offline	Online	
		MVS Superwylbur	Chip, Dale
Documentation	Terminal Clusters	pub doclist	doclist
	Usite Business Office		
	Regenstein Reserve		
	Harper Reserve		
	Bookstore		
Notice File		pub notice	notice

Dial-up Connections

MODEM	On Campus	Off Campus
All Systems 300 Baud	5-8880	753-0980
All Systems 1200 Baud	5-8890	753-0945
IBX DOB (all switches)		
300-1200-4800 baud	5-3600	
Telenet Network Address		
300 baud	31236A	
1200 baud	31236	

Gandalf Class Codes

System	Baud Rate			
	300	1200	4800	Telenet
MVS	mvs3	mvs12	mvs48	mvstn
CHIP	chip3	chip12	chip48	chiptn
DALE	dale3	dale12	dale48	daletn
PYRAMID	unix	unix	unix	

Computation Center Administration

Computation Center Director
       Carolyn D. Autrey-Hunley   962-7690
Assoc. Director, Operations and Technical Services
       John E. Iannantuoni   962-7616
Asst. Director, Instruction and Research Information Services
       Harold C. Bloom   962-7155
Asst. Director, Information Technologies and New Services
       George R. Bateman   962-7174
Asst. Director, Administrative Information Services
       David E. Trevvett   962-6018

User Group News Editor
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

Microcomputing Club Information

Please give us the following information about your User group and return by the 10th of each month for inclusion in next month's Newsletter. Mail this entire sheet to:

User Group News Editor
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

User Group Name:

_____

Your Name:

_____

Announcement:

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Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

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( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
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Address
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Address
_____

Address
_____

City
_____

State _____   Zip _____

UNIVERSITY OF CHICAGO
COMPUTATION CENTER
5737 South University Avenue
Chicago, Illinois 60637

UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Table of Contents

GENERAL NEWS

Ethernet Connects Major Campus Computers

The goal of the Ethernet Project at the University of Chicago is to provide a pilot high-speed communication network linking a number of the larger computing sites on Campus. Experience from this project will be invaluable in planning future distributed computing and networking at the University.

A high-quality fiber optics network is being installed between five campus buildings. Local area coaxial networks have been or are being constructed at the Computation Center, the Graduate School of Business, Astronomy, Computer Science, Math, Statistics, Biophysics and Chemistry. These local area coaxial networks will be interconnected via the central fiber optics pathway. Locally assembled and programmed Internet gateways will optimize use of the central fiber optic pathway by only allowing interbuilding traffic.

The network design is flexible enough to allow for both additional sites and growth in communications traffic. There are already plans to extend the network in the coming year to include several computing sites in the University Hospitals.

At the present time, three sites are connected to the network and are functional. These are the Computation Center's Pyramid (Sphinx), the Computer Science Department's Pyramid (Anubis), and

a cluster of computers at Astronomy and Astrophysics, which includes a VAX780 (Oddjob), a cluster of four Sun workstations, and four Apollo workstations.

Mail addressed according to the format,

user-name@host-machine

may be sent between these machines.

Some useful Unix-specific commands are:

ruptime: displays a list of Unix machines currently on Ethernet; displays whether a machine is up or down and for how long

rwho: displays a list of users who are currently logged in on the various Unix computers

talk: allows short messages to be exchanged between current users on any of the Unix systems

The File Transfer Program (documented online on the Pyramid; see "man FTP") is also working, and remote logins, described on the Telenet "man" page, are allowed.

In keeping with the experimental nature of this project, new configurations and topologies will constantly be tested and evaluated. For the latest news and configuration information read the Ethernet bboard in MM on Chip.

Computation Center Orientations

Orientations to computing at the public clusters at the University of Chicago will be provided during the first weeks of Spring quarter according to the following schedule:

Tuesday, April 2: 1:00-2:30
Wednesday, April 10: 4:00-5:30

Meet by the Walt Whitman statue in Usite.

Orientations for groups of seven or more can be arranged for any specified time by contacting Ed Donner at 962-8188 or through electronic mail (STAFF.EDDONNER on the DEC and XX9SAGE on MVS).

Change in Availability of IMSL Source Code

The IMSL library of mathematical and statistics routines is a proprietary product of International Mathematics and Statistics Libraries Inc. As such, the routines are protected by law from improper distribution or use. Therefore, the source code for these routines will no longer be publicly available on Computation Center computers. However, source code may be obtained for the specific purpose of making modifications to be used only on the University of Chicago's computer systems. In order to obtain the source code for that purpose, you must sign a nondisclosure agreement.

If you wish to distribute a program which uses IMSL routines, you must obtain a derivative license from IMSL. This license permits you to use the object code, or load module (not the source code), as part of your program.

For additional information or assistance, contact Don Goldhamer at 962-7166.

SPSS Version 9.1 To Be Removed

This is a reminder that SPSS Version 9.1 will be removed from all Computation Center computers after April 1, 1985. We urge people to convert their applications from SPSS version 9 to SPSS-X before that time.

You may contact either the program advisor at 962-7624, or the social science advisor at 962-7892 for assistance in converting your SPSS version 9 programs to SPSS-X. Note that SPSS-X is able to read SPSS system files written by version 9.

Some Software Support Reduced

Over time, the Computation Center has acquired a great variety of software packages. Many of the older applications currently installed are no longer widely used. In some cases the vendors have stopped supporting certain packages, and updates are no longer available. It has become necessary to reduce the level of Center support for these programs. Below is a list of the affected software.

Statistical Packages: AID, BMD, CENSPAC, CENTSAID, CLUS, CRESCAT, ESP, MCA, MLLSA, SNAP

Text Handlers: LETTER, POET, RUNOFF, SED, SPELL, TECO, TRIAL/360, TV

Other Programs: PPAPLOT, REDUCE2, RPG, SAIL, SEISLIM, SYMAP

The level of support for all of the programs listed above has been reduced to C3. The "C" indicates

that the software is "supplied only". The Center will neither guarantee to fix bugs nor to notify the supplier (who, in many cases, can no longer be reached). Bugs which are reported to the Center will be published in Center documentation.

The "3" indicates that Center staff are unable to help users who encounter problems with these programs. The program advisors will, if time permits, assist users in interpreting the available documentation.

The complete list of Center software with their support codes and an explanation of the support codes is provided in Memo 4246.

reconnecting to the same port. Or, someone else tries to logon and they get connected to that blacklisted port.

Blacklisting is a feature of the Gandalf hardware. It is meant to provide better service to users wanting to logon by ignoring connected terminals which are just left turned on.

The Communications Services Group of the Computation Center is working with Gandalf to develop an alternative to blacklisting that will still provide good service to users wanting to logon, but will minimize the problems associated with blacklisting. We will keep you informed.

Terminal Blacklisting

Have you ever had difficulty obtaining the "enter class" prompt when trying to logon to one of our computers? If so, then you may have been attached to a "blacklisted" port. Whenever you turn on a terminal connected to a multiplexor, or dial up using a DOB or modem, you are connected to a Gandalf port. The Gandalf acts like a switchboard to route messages between you and the computer of your choice.

When you connect to a port, the Gandalf waits for you to send a carriage return. However, it only waits for 15 seconds. After that time, it attends to the other ports. On its next trip through the ports, it once again waits for 15 seconds before moving on. After three passes, the Gandalf ignores the port for about two minutes.

During that time of "blacklisting", you will not be able to logon. However, keep trying because you will eventually get the "enter class" prompt. If you turn off the terminal or otherwise disconnect, you don't gain anything because it is the Gandalf port that is blacklisted, not the terminal. So, you end up

Newsletter Publication Reduced to Quarterly

Because of the strain on available resources, the Computation Center is reducing its *Newsletter* publication schedule from monthly to quarterly. Each quarterly issue of the *Newsletter* will be published before the beginning of an academic quarter. This will allow information necessary for the new academic quarter to reach people early enough for them to act on it. The planned publication dates are as follows:

Quarter	Publication date
Summer 1985	June 3, 1985
Fall 1985	September 20, 1985
Winter 1986	December 2, 1985
Spring 1986	March 10, 1986

With the *Newsletter* being published quarterly, alternate sources of information about changes in hardware, software, policies, and procedures become more important. The Computation Center will continue to make announcements using the on-line

facilities of its computers.

Warnings about transient system conditions, announcements of meetings, and notifications about changes will continue to be placed in the logon messages for the DECs and IBM, and in the msgs file on the Pyramid. In order to keep informed, it's a good idea to read through these messages whenever you logon.

Detailed information about problems or changes in facilities will be placed in the Notice Files for the DECs and IBM. The NOTICE program on the DECs and on Superwylbur on the IBM allows you to scan the titles of entries by category or since some specified date. You may then view the text of entries that interest you. Simply type "NOTICE" on either machine. The program provides instructions.

The most detailed information provided by the Computation Center will continue to be in the memos. The DOCLIST program on the DECs and the IBM prints copies of memos. On the IBM, the DOCLOG program identifies memos which have been added since a particular date. DOCLOG will also inform you about any changes which have been made to any specified memo.

Finally, the index to documentation will be revised on a more regular basis. This will enable you to locate relevant documentation based on keywords. There are plans to develop the capability for on-line searches of the index. However, that may not be ready until the Fall Quarter. We will announce its availability in the logon messages.

We regret the necessity for the reduction in the publication schedule of this *Newsletter*. However, we choose to treat it as an opportunity to develop alternative ways of providing timely information to you. It is our intention to keep you as informed about our computational facilities as is possible.

Computation Center Classes for Spring 1985

The Computation Center is once again offering a variety of short, non-credit courses and seminars which are open to the general University community. A schedule of the classes available for Spring Quarter follows. For a complete description of these classes please consult the *Computation Center Seminar and Course Curriculum Guide* for 1984-1985. The *Curriculum Guide* also gives you recommended class sequences to take for different subject areas and lets you plan the Center's classes you want to take during the year. Please note that all classes are not offered each quarter and you must consult the guide to plan your classes accordingly.

Each seminar and course has an identification number associated with it in order to simplify course selection and registration. Each seminar and course also may have prerequisite classes listed for it. The prerequisite classes, or equivalent knowledge of the material that they cover, are essential to understanding the topics covered in the classes dependent on them. Class instructors work from the assumption that you will have attended the appropriate prerequisite classes or already understand the subjects discussed in those classes. To make effective use of the classes that the Center provides you need to take classes in the sequences suggested in the *Curriculum Guide*.

Since publication of the current *Curriculum Guide*, the Center has reduced the number of seminars and courses available each quarter. These reductions were due to poor attendance at some of the classes as well as the need to use scarce instructor resources in a more efficient manner. Because of these changes the recommended course sequences and lists of available classes discussed in the *Guide* may not be available during Spring Quarter. If you need to take a class that we are not offering during this quarter, contact the Center's Educational Coordinator, Don Crabb, (phone 962-7173, or send DEC-20 MM to STAFF.DON-

CRABB). We may be able to add the class if enough people express an interest.

In addition to the quarterly seminars and courses taught in a classroom setting, the Center also provides videotaped training sessions. More information on video computer classes can be found in the *Curriculum Guide*, or by contacting Ed Donner, at 962-8188 or by sending DEC-20 MM to STAFF.ED-DONNER.

Registration is required for all courses. Many seminars also require registration. Most seminars are free of charge, but there is a fee for courses and several of the seminars. The fee may be paid in cash, charged to a Computation Center billable project (Student and Faculty Personal Computing Accounts, PCA's, are not billable projects), or paid with a University 62 form. A refund will be made if you request one before the start of the second session of the course in question. All seminars and courses which fail to meet minimum enrollments listed are subject to cancellation. You will be notified if a class is cancelled.

You may register for courses in person at the Computation Center Usite Business Office, in Wieboldt 310, from 8:30 a.m. to 12:00 p.m., and from 12:30 p.m. to 4:30 pm, Monday through Friday. Seminar registration is often handled differently — consult the class schedule listings below for information. Anyone wishing further information concerning the topics and content of these seminars and courses should examine the *Computation Center Seminar and Course Curriculum Guide* for 1984-1985 or contact Don Crabb.

Spring Quarter 1985 Seminars

CC105 - FUNDAMENTALS OF COMPUTER CONCEPTS AND TERMINOLOGY (2 Parts)
Dates and Times: Monday and Wednesday, April 15 and 17, 3:30 - 5:00
Prerequisites: None
Instructor: Don Crabb
Note: This is a new class, combining material previously in CC100 and CC120.

CC110 - INTRODUCTION TO THE UNIVERSITY OF CHICAGO COMPUTATION CENTER FACILITIES AND SOFTWARE
Date and Time: Tuesday, April 16, 3:30 - 5:00
Prerequisites: None
Instructor: Don Crabb

CC205 - INTRODUCTION TO TEXT EDITING WITH SUPERWYLBUR
Date and Time: Friday, April 19, 3:30 - 5:00
Prerequisites: CC105, CC110, or equivalent knowledge
Instructor: Vivian Nix
Note: This is a new class, combining material previously in CC200 and CC410.

CC430 - TEXT PROCESSING IN THE IBM ENVIRONMENT (TREATISE, SCRIPT) (Two Parts)
Dates and Times: Monday and Wednesday, April 22 and 24, 1:00 - 2:30
Prerequisites: CC105, CC205, or equivalent knowledge
Instructor: Ed Donner

CC210 - INTRODUCTION TO THE DECSYSTEM-20s (Two Parts)
Dates and Times: Monday and Wednesday, April 22 and 24, 3:30 - 5:00
Prerequisites: CC105, CC110, or equivalent knowledge
Instructor: Chris Delmar

CC220 - INTRODUCTION TO THE PYRAMID/-UNIX SYSTEM (Two Parts)
Dates and Times: Tuesday and Thursday, April 23 and 25, 3:30 - 5:00
Prerequisites: CC105, CC110, or equivalent knowledge
Instructor: Pete Davis

CC460 - INTRODUCTION TO MUSE WORD PROCESSING ON THE DECSYSTEM--20s (Three Parts)
Dates and Times: Monday, Wednesday, and Friday, April 29, May 1 and 3, 1:00 - 2:30
Prerequisites: CC210, or equivalent knowledge
Instructor: Arlene Brown

**CC300 - INTRODUCTION TO MICROCOMPUT-
ING (Three Parts)**
Registration is required for this seminar.
Register by phoning
962-7173 by Friday, April 26.
Minimum Enrollment: 10
Maximum Enrollment: 52
Dates and Times: Monday, Wednesday,
and Friday, April 29, May 1 and 3, 3:30 -
5:00
Prerequisites: none
Instructors: Martha Ash and Don Crabb

**CC440 - EMACS FULL SCREEN EDITING ON
THE DECSYSTEM-20s AND PYRAMID/-
UNIX**
Date and Time: Tuesday, May 7, 3:30 -
5:00
Prerequisites: CC210 and CC220, or equiv-
alent knowledge
Instructor: Al Schultz

Spring Quarter 1985 Courses

CC540 - THE BASICS OF SPSS-X (4 Parts)
Registration is required for this course.
Register at the
Usite business office by Monday, April 22.
Dates and Times: Tuesdays and Thurs-
days, April 23 - May 2, 1:00 - 2:30
Cost: $20.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC205, or equivalent knowl-
edge
Instructor: John Raz

CC530 - INTRODUCTION TO SAS (6 Parts)
Registration is required for this course.
Register at the
Usite business office by Monday, May 6.
Dates and Times: Tuesdays and Thurs-
days, May 7 - May 23, 5:30 - 7:00
Cost: $30.00
Minimum Enrollment: 10
Maximum Enrollment: 52
Prerequisites: CC205, or equivalent knowl-
edge
Instructor: John Raz

Unix Instructional Videos Available

Several new video-tapes are being added to the instructional video collection at Usite. The first three videos from a series describing Unix on the Pyramid Computer are available. These videos are described below.

Three other modules in the series are scheduled for release during the month of March. These videos will discuss a range of topics including the basic editor (ED), shell scripts, command processes, and information regarding the configuration of Unix you will find on the Computation Center's Pyramid.

The six part series provides a basic working knowledge of Unix in three hours of video instruction. All Computation Center videos can be seen free of charge at Usite. See the Usite attendant if you would like to view the Unix series or if you have questions on the other instructional videos that are available.

New Videos:

UNIX I: OVERVIEW
One video (20 minutes)
Instructor: Pete Davis
Host: Don Crabb
This video introduces Unix, the operating system on the Pyramid computor. The available software is surveyed. Logon procedures and a few simple commands are demonstrated.

**UNIX II: INTRODUCTION TO FILES AND DI-
RECTORIES**
One video (30 minutes)
Instructor: Pete Davis
Host: Don Crabb
This video starts with a brief discussion of
the resources that are available to the Unix
user, and then moves into an introductory
discussion of files and directories.

UNIX III: FILE MANAGEMENT & SECURITY
One video (25 minutes)
Instructor: Pete Davis
Host: Don Crabb
The basic commands necessary to copy,
rename, delete, and move files are dem-
onstrated. By default, anyone can copy or
use anybody elses' Unix files; the proce-
dure for altering file security is demonstrat-
ed.

DATA RESOURCES

— *Melissa Trevvett*

New Documentation on Data Resources

The Center has updated its guide to machine-readable social science data resources. Memo 4341, available through DOCLIST, gives an overview of these data resources currently available at the University of Chicago.

In addition, the Center has issued an updated list of machine-readable social science data collections that the University has obtained from the Interuniversity Consortium for Political and Social Research (ICPSR). In addition to listing the ICPSR data collections currently held by the Center, the report provides information for accessing them through the University's computing systems. The list is available through DOCLIST by requesting manual ICPSR. (The manual is 99 pages.)

The data collections are listed in ICPSR study number order; the study number can be found in the *ICPSR Guide to Resources and Services,* which is available in the Computation Center Clusters and library reserve areas. For information on the specific locations and reserve numbers see the manual.

Census Data Arranged by Zip Code

Summary census data arranged in zip code order (Summary Tape File 3B) are now available through the Computation Center. The special tabulation deals with the same variables that are present in the other Summary Tape File 3 series, but it offers a geographical breakdown by ZIP code. Only the STF-3B files provides demographic breakdowns by ZIP Code. The STF-3B tapes were donated to the Computation Center by the Community and Family Study Center.

Memo 4341 provides additional information on the ZIP Code special tabulation and Memo 4222 provides access information. Both memos are available at the public clusters, and, you may obtain your own copy via DOCLIST.

SPSS/PC

Users can request a demonstration of SPSS's statistical package for micros, SPSS/PC from the Demo Lab. See the article entitled, "New in the Demonstration and Development Lab", in this *Newsletter* for more information.

MVS

SPSS-X Version 2.1 Now on the IBM

SPSS-X version 2.1 is now in test on the IBM 3081. It has enhancements to the import/export commands and several new facilities for communicating with SPSS/PC. There are also new facilities for translating SAS files into portable SPSS system files or SPSS-X system files. To use SPSS-X Version 2.1, code your EXEC statement as follows:

//stepname EXEC SPSSX,VERSION = 21

Highlights of the new facilities are presented below.

EXPORT/IMPORT

The EXPORT command creates portable files which can be read on different computer systems using SPSS-X or other software applications which use the same portable file format. Because character sets differ according to installation, transmitting files by communications programs may not be possible if the program misinterprets characters as control characters (for example, as line feed, carriage return, or end of transmission). The change to the EXPORT command is designed to alleviate this problem. It affects only SPSS-X portable file operations, not those for SPSS/PC. You may now create either a communication or tape formatted portable file using the TYPE option on the EXPORT command:

FILE HANDLE portfile/(file specifications)
EXPORT TYPE = {COMM|TAPE}/OUTFILE = portfile

The default is TYPE = COMM which replaces all control characters with zero ("0"). Always use this option to transmit portable files by a communications program. These files are written in 80 character record lengths, so to assure the proper transmission, the line length of the communications program must be set to 80 also.

To read a portable file in SPSS-X, use the IMPORT command:

FILE HANDLE portfile/(file specifications)
IMPORT TYPE = {COMM|TAPE}/FILE = portfile

Any blank lines or special characters inserted by the communications program during transmission must be edited out prior to reading the file with the IMPORT command.

SAS FACILITIES

The GET SAS command allows you to read SAS files with SPSS-X. In most cases this means you can retrieve the data and the data definition items, including the file label, variable and value labels, print and write formats, and missing values for each variable. This information may then be stored in an SPSS-X system file with the SAVE command.

The GET SAS command must be followed by the DATA subcommand which names the SAS data set to be used as input. In addition to this required subcommand, there are a number of optional subcommands:

SASLIB: used after the DATA option to specify the DDNAME for the Library containing SAS formats.

DROP and KEEP: used to specify subsets of a SAS data set for conversion.

RENAME: used to change the names of variables in the SAS file to names compatible with SPSS-X naming conventions prior to storing them in the result file.

MAP: used to display variable names and their order in both the SAS and SPSS-X files.

SPSS/PC

There are three facilities included in release 2.1 which will make communication with the new SPSS/PC product easier.

The XTOPC program converts SPSS-X syntax into syntax suitable for SPSS/PC.

The PCTOX program does the reverse, converting SPSS/PC syntax into SPSS-X syntax.

TOSPSS is a SAS procedure which converts SAS data sets into SPSS-X portable or system files. It is documented in the *SPSS/PC User's Guide*.

These facilities can be used with the Kermit program to transfer SPSS-X and SAS files between the IBM 3081 and your microcomputer. An IBM PC running SPSS/PC and Kermit can read files which were converted by XTOPC and transmitted via Kermit on TSO.

SPSS/PC is one of the software packages recently added to the Demonstration and Development Lab, 5737 S. University. To make an appointment to see SPSS/PC, phone 962-7151.

For a full discussion of all the new features and enhancements in SPSS-X version 2.1, you should consult the SPSS-X Information File. Run a batch job specifing:

```
// EXEC SPSSX,VERSION = 21
INFO OVERVIEW FACILITIES
```

Coming Soon: A new version of TREATISE

As of this writing, a new version of TREATISE is being tested, and should be released shortly. Many new features and functions are being added and many old bugs are being fixed. Some of the more important changes are listed below.

1. The footnote area will automatically preempt an entire page EXCEPT for the first two lines of text. An option to reset the minimum main text area from 2 lines to n lines will also be available for non-dissertations.

2. Legends can be automatically placed under Figure plate titles.

3. There will be simpler methods for underlining and footnoting words in part, chapter, and section titles.

4. There will be a facility for setting automatic user-defined counter variables, such as for equation numbers.

5. Default formatting will be set for elite printing as opposed to the current settings for pica.

6. There will be simplified methods for underlining or changing the font of the word referenced by a footnote.

7. There will be a facility for setting automatic running headers in multiple page tables and figures.

These and other changes will be documented in the revised version of the TREATISE manual, and before that in the IBM and DEC NOTICE files. Announcements of the test and production availability of the new version of the program will be in the logon messages, system-wide mail, and the Superwylbur TREATISE macro.

TOPS-20

Printing WordMarc Files on the 9700s

WordMarc users wishing to print their files on the Xerox 9700s, with or without such amenities as alternate fonts, superscripting, subscripting, underlining, and overlaying, may do so with the following equipment in hand:

1. Communications/File Transfer capabilities between the micro and the Center's DEC-20's. (A copy of Kermit plus a modem or ITE/DOB combination will do the trick).

2. Access to accounts on the Center's DECs and its MVS system.

To simplify the process further, it is also advisable that you download from either DEC-20 a copy of the file called:

MUSESYSTEM:97MF.SRC

This is a source file for the WordMarc Xerox 9700 printer driver. With it, you will be able to create a copy of the printer driver on your own micro.

Once you have 97MF.SRC on your micro, load the WordMarc utility disk and execute the program called TRMDEF. This program will ask you for the source file. Your response will be the drive, if not the default drive, and the file name, 97MF.SCR. WordMarc will then prompt for the output file name,

which you should name, 97MF.CFG.

Next, use WordMarc to edit the file called PCONFG.CFG which resides on the WordMarc disk. Add the following line to the file:

#2 97MF

This will identify the 9700 print driver as device number 2. Now you're ready to print files on the 9700s.

The printing process entails these steps:

1. Create the file with WordMarc.

2. Save the file and then, from the PRINT menu, check your printer number and then select QUEUE (which places a ready-to-print copy of your WordMarc file on the disk.)

3. Logon to either DEC, CHIP or DALE and use Kermit, or whatever file transfer software you have, to send a copy of the ready-to-print file over to the DEC.

4. Get to the monitor level of the DEC which now contains the copy of your ready-to-print file and give the command,

MUSE97

in response to the @ prompt.

5. You'll be asked a number of questions, including where is the DEC copy of the ready-to-print file and what is your MVS logon-id.

6. These prompts and all the others are more fully explained when you respond with a question mark. A more detailed explanation is in Center Memo 2057, "MUSE97: Printing Muse Files on the 9700." Most of the prompts are fairly easy to understand and involve such

matters as how many copies you want printed, where they should be delivered, and if printing should be done 10 characters to the inch (Pica) or 12 characters to the inch (Elite).

7. Two prompts which might be confusing involve how superscripts and subscripts and alternate character sets should be printed. A number of options are provided, which are explained in Memo 2057, BUT if you respond to each with a carriage return you'll get the default settings which work as follows:

   a. Superscript and subscript lines are printed as half lines above or below the baseline with which they are associated

   b. Characters entered in ALT mode in WordMarc are printed as italic characters.

   c. Characters entered in BOLD mode in WordMarc are printed as bold characters.

   d. Characters entered in BOLD/ALT mode in WordMarc are printed as bold italic characters.

In addition to printing on the 9700s, there are a number of other reasons for sending WordMarc files to the mainframes. These include access to other mainframe printers, such as Xerox 2700s, use of the extended formatting capabilities of Script or Xset, or, in some instances, use of mainframe editors, especially Muse which is the mainframe version of WordMarc. Information on accessing these tools will be in the next issue of this *Newsletter* and in the upcoming revision of Memo 2050, "MUSE," (which will also incorporate 2057, "MUSE97").

Remember, if you wish to use Muse to edit the transferred file, use the Mudump utility. The file is in print image or ASCII format and can be used with other editors, formatters, or applications programs.

Command Line Editing Now Available on the DECs

TOPS-20 has a convenient new feature. The last few commands entered at the terminal are saved and are available for you to re-execute or to edit and re-execute.

To make previous commands available enter " ^ " (a caret) followed by a carriage return at the TOPS-20 level:

All commands are saved in a circular buffer. The most recent (current) command is referenced as 0, and earlier commands are referred to as -1, -2, ... etc.

To repeat the most recent command, enter " ^ " followed by a carriage return. Entering " ^ 1" followed by a carriage return will repeat the command immediately preceding the most recent.

Once the command is displayed at your terminal, you may edit it. The default mode of editing commands is Emacs. Without changing this default, you will find that Control-P displays the command just previous to the one displayed. Control-E will move the cursor to the end of the command, control-A will move you to the beginning of the command. A carriage return will re-execute the displayed command, and a control-C will return you to the TOPS-20 level without doing anything.

Command line editing has an online HELP file; the command,

@help command-edit

will display it at the terminal. The HELP file will tell you what you need to know about using Emacs to edit commands. There are also instructions and commands for setting Edit as the editor. In the HELP files, it is called "Alter" mode.

New Release of TOPS-20 Installed on CHIP

CHIP is a field test site for Digital Equipment Corporation's version 6.1 of TOPS-20. We are one of a group of eight DEC customers to receive this release first.

By the date of this *Newsletter*, TOPS-20 version 6.1 will have been installed as the production version on CHIP only. The new version provides some features that will enable CHIP to connect to the local Ethernet, and as soon as the new EXEC is tested thoroughly and trouble-free, the Ethernet hardware will be installed.

There are new commands, and enhancements to old commands in the new EXEC.

Some enhancements include:

DIRECTORY has a COMPLETE subcommand to display the full specifications of each file;

DEFINE recognition now works;

DDT/MERGE are provided with a new OVERLAY subcommand to force overlaying of existing pages;

LOAD has several new switches (including /PASCAL);

INFORMATION SUPERIORS is a new command to return the number of superior processes at this exec level.

A whole set of new features enhances multiforking capabilities. Multiforking organizes a job's memory into separate parallel address-areas called forks. This means that several programs may be run in the background in separate forks while the terminal is left free for further work.

Information about the new features will be found in NOTES:V61-EXEC-CHANGES. Copies of the field test reference manuals are available at the terminal clusters.
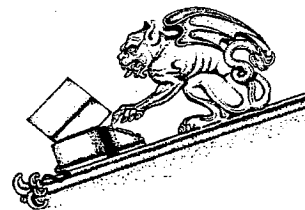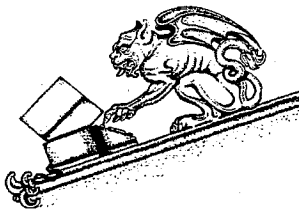
MICROCOMPUTING

Uploading MacWrite Documents

It is possible to create files using a Macintosh and then upload those files to two of our three main computers. You may want to do this in order to save money by preparing your text on your own Macintosh. Or, you may want to take advantage of our high quality laser printers. The Talaris printer is accessible on the Pyramid and the Xerox 9700 printers are accessible from the DECs through the MVS program.

MacTerminal, an Apple software package available from the Microcomputer Distribution Center, allows transferring files between a Macintosh and another computer. MacTerminal is provided for your use on the publicly available Macintoshes, located at both the Usite and the Crerar Library Cluster. You may purchase time on these machines for $2.00 per hour from the Usite Business Office.

Using MacTerminal, you may upload MacWrite documents directly to the Pyramid. For the DECs, you must save a MacWrite document as a "text only" file before uploading it. This option is in the SAVE or SAVE AS dialog box in the MacWrite FILES menu.

The Pyramid is the most direct and reliable route to printing, since it performs error checking on the files it transfers. It also preserves some of your font selections.

Kermit is a program that will perform error checking when transfering files on the DECs or the IBM. We will obtain the Macintosh version of Kermit as soon as it is available. In the meantime, a transfer process for the DEC is reported here as a temporary expedient.

If you need to transfer a file to the IBM, you may send it first to the DEC, and then use the MVS program to transfer it to the IBM.

Transferring a file to the Pyramid.

In order to transfer a Macintosh file to the Pyramid, you must run MacTerminal on the Macintosh and set the appropriate parameters in the COMMANDS and SETTINGS menus.

From the COMMANDS menu, select DON'T RE-CORD LINES OFF TOP. This will prevent saving your entire session on the MacTerminal disk. This option is confusing. Once you have selected DON'T RECORD LINES OFF TOP, the option RE-CORD LINES OFF TOP is displayed. In other words, the option which is displayed is the alternate to the option currently in effect.

Options are selected by using the mouse to position the pointer in the box near the option and "clicking" the mouse button.

In the SETTINGS menu, the recommended TERMI-NAL options are:

Terminal:	VT100 (default)
Mode:	ANSI (default)
Cursor Shape:	UNDERLINE (default) or BLOCK
Character Set:	UNITED STATES (default)
Line Width:	80 COLUMNS (default)
Other local terminal settings:	

ONLINE
AUTO REPEAT
AUTO WRAPAROUND

The COMPATIBILITY options should be set as follows:

Baud Rate:	4800 BAUD (for Usite or Crerar) 1200 is the default
Bits per Character:	8 BITS (default)
Parity:	NONE (default)
Hand Shake:	Xon/Xoff (No handshake is the default)
Connection:	MODEM (default) OTHER COMPUTER (for Usite or Crerar)
Connection Port:	PHONE (default)

The FILE TRANSFER options should be set as follows:

Transfer Method:	XMODEM (default is TEXT)
Remote System:	MACTERMINAL (default is OTHER)
Delay Between Characters:	0 (default)
Delay Between Lines:	0 (default)
Other settings:	

> RETAIN LINE BREAKS (default)
> WORD WRAP ON OUTGOING TEXT (default)

Once you have configured the Macintosh, login to the Pyramid. If you are transferring a "text only" file, type the following command. (Note that "%" is the Pyramid prompt.)

% /usr/sun/mac/bin/macget -u

The Pyramid will then run the MacGet program to receive a text file. Insert the disk containing the file to be tranferred, and select SEND FILE from the FILE menu in MacTerminal. The available files will be listed in a window for you to select the one to be transferred.

MacTerminal will not display the text as it is transferred. It provides a ruler which indicates the percent of text transferred. When the ruler registers 100%, the transfer is complete. The file will reside in your directory on the Pyramid.

A MacWrite document is stored in three files, a .data file, a .rsrc (resource) file and a .info file. If you are transferring a MacWrite document, you may use either of the following commands.

% /usr/sun/mac/bin/macget	(this sends all three MacWrite files)
% /usr/sun/mac/bin/macget -d	(this sends only the .data file)

Unix users should note that the path can be added to the .cshrc file, ie.,

path = (/usr/bin /usr/sun/mac/bin).

Printing Your MacWrite Document on the Talaris Printer

The w2t program on the Pyramid reads the files and produces a troff input file on the standard output. You must use the .data file for the w2t program.

To submit your file to the w2t program, use the following command.

% /usr/sun/mac/bin/w2t name.data |tbl|qtroff -me

This command uses the table option for qtroff, which is only necessary if the document contains tables.

For online information about w2t, type the command,

man w2t

W2t maps all Mac fonts to troff's Times Roman. Boldface and Shadow are printed in Bold. Italic and Underline are printed in Italic. Style combinations are printed in either Bold or Italic. Since w2t is a recently acquired program, no one has experimented enough to identify the conditions which result in one or the other font. In addition to these font restrictions, headers and footers are ignored and decimal tabs are not handled correctly.

Transferring files to the DEC:

When you are preparing a file as "text only", select the Monoco font from the FONT menu and 9PT from the STYLE menu. This will place the text in a monospace, 80-column format, which will help preserve the spacing of the text. Any MacWrite file saved as "text only" can be transferred to the DEC computers using the following procedure.

Run MacTerminal on the Macintosh. Make sure the the COMMANDS menu shows the option, RE-CORD LINES OFF TOP. As explained before, when that line is displayed, your session will not be saved on the MacTerminal disk.

From the SETTINGS menu, the TERMINAL settings and COMPATIBILITY options are the same as those described for the Pyramid.

The FILE TRANSFER options should be set as follows.

Transfer Method: TEXT
Remote System: OTHER
Delay Between
         Characters: 0
Delay Between Lines: 0
Other settings:

    RETAIN LINE BREAKS (default)
    WORD WRAP ON OUTGOING TEXT
    (default)

Once you have configured the terminal to be compatible with the DEC, you may log onto either CHIP or DALE and Type the following command. ("@" is the DEC prompt.)

@copy tty: filename

The filename is the name you have given to the file on the DEC. Now you can select the SEND FILE option from the FILE menu in MacTerminal and insert the disk which contains the file.

You will see each line of the file as it is transferred. When the entire file has been transferred, type a control-z to complete the process and return to TOPS-20 command level.

Microcomputer User Group News

The new publication schedule of the *Newsletter* makes it difficult to publish timely announcements about microcomputer user group events. In order to publicize these events, the Computation Center will place announcements in the logon messages for the DEC and IBM computers.

To have this done, send the text of your message to Cathy Kosto at 5737 S. University. You may also send the message using DEC MM to Staff.Cathy. Try to keep announcements to a maximum of five lines. Long messages at logon time tend to get ignored. If a message is too long, we may edit it or place it in the Notice File.

New in the Demonstration and Development Lab

During the past month, there have been several new systems added to the Demonstration and Development Lab, 5737 S. University Avenue. In addition, all DEC personal computer systems have been removed. To make an appointment to see any of the hardware or software in the Lab, call 962-7151.

Since the *Newsletter* is now published quarterly, we recommend using the Miclab program on either DEC to obtain up-to-date information about hardware and software in the Lab. Using the "since" option, you may limit the display to hardware and software acquired since some specific date.

New hardware systems include:

- **IBM XT** with 512K RAM, an 8087 math coprocessor, and a monochrome monitor.

- **Hewlett Packard Integral Personal Computer** with an MC68000 processor, 1 MB RAM, 256K ROM, an internal Think-Jet printer, 9- inch electroluminescent display, 1 internal 700K micro floppy disk drive, and a mouse. Software runs under the HP-UX operating system (UNIX kernel in ROM), and includes C development tools as well as a complete HP-UX utility library and HP Basic.

  To correct and clarify the information listed last month on the Hewlett Packard plotter, it is an HP 7475A 6-pen color plotter with an RS232 interface.

- **NBI U! Technical Workstation** with an MC68010 CPU, 2 MB RAM, 23 MB hard disk, high resolution (1024 x 768 pixel display) black and white monitor, 5-1/4" double-sided, double-density (96 tpi) diskette drive, and a mouse. The system runs the complete version 4.2 Berkeley UNIX, with C and Fortran compilers.

The following software for the IBM systems has come in:

- **SPSS/PC** statistics package for the IBM PC/XT/AT (requires a minimum of 320K and a 10 megabyte hard disk)
- **Lotus 1-2-3** for the IBM XT
- **SamnaWord III** word processing program for the IBM XT (requires a minimum of 256K)
- **Multimate** word processing program for the IBM PC/XT/AT
- **DisplayWriter II** word processing program
- **RBase 4000** database manager
- **IBM Filing, Writing, and Graphing Assistant**, IBM Personal Editor (demo version)
- **Wordstar 2000** for the IBM PC/AT

The following software for the Apple Macintosh has also been added:

- **Microsoft Word** word processing program
- **Microsoft File** database manager
- **FactFinder** free-form filing system
- Upgrade to version 1.1 of **Tekalike** graphics terminal emulation program

DEPARTMENTS

People

Promotions within the Center:

Jerome Becker of Communications Services has been reclassified from Project Manager to Engineer/Project Manager. **Willie Stewart**, also of Communications Services, has been promoted from Jr. Electronics Technician to Electronics Technician. **Joan McGrane** and **Vivian Nix**, both Documentation Specialist II for Instruction and Documentation Services, have been promoted to Junior Programmer/Analyst I. **Tom Barron** of Administrative Information Services was promoted from Junior Programmer/Analyst I to Junior Programmer/Analyst II. Also from the Administrative Information Services Group, **Linda Tuttle** was promoted from Junior Programmer/Analyst II to Programmer/Analyst, and, **Clark Wilson** was promoted from Senior Programmer/Analyst to Lead Programmer/Analyst.

People who have left the Center:

James Krema has left the Center to pursue a career in private consulting. He was Manager of Information Systems since July 1982.

Jerome Jordan, Documentation Specialist II for Instruction and Documentation Services, and **Lester Pyle**, Jr. Programmer/ Analyst II for Administrative Information Services, have left the Center.

In the Instruction and Documentation Services group, **Ulf Bockenholt**, Computer Cluster Assistant, has left to return to Germany, and **Christa Winter**, Data Control Clerk, has joined the faculty at the University of North Carolina.

Documentation

New Documentation Available

01/11/85 **4301** Center related documents
Reflects changes or additions since 7/84.

01/09/85 **4346** AMDB
Now contains information on enrolling or locking a student who is a classroom project member on any Center mainframe computer. The "Get password" feature of AMDB is illustrated.

01/09/85 **4320** Class Instructors
Now contains information about classroom projects on the Pyramid and new AMDB features which allow instructors with projects on the Pyramid or DEC-20 to enroll or lock project members' accounts.

12/28/84 **2058** WS97
WS97, a facility for printing files created with WordStar on the Center's 9700 printers is described in this memo. WS97's features include printing with alternate fonts, superscripts, subscripts, and overlays. 18 pages

12/17/84 **6002** KERAP65
Memo 6002 describes procedures for uploading and downloading files between the Apple //e (][and][+) and the DEC-20s and the IBM 3081D.

Recently Updated Documentation

02/07/85 **R124B** MUSE Tutorial

01/08/85 **2028** DUMP22

12/18/84 **4347** Setting Up a Project

New in the MVS Notice File

02/06/85 **MICR11** Macintosh self-teaching guides at Usite

02/04/85 **MICR10** Micro-computers publicly available

01/25/85 **SPSS18** SPSS-X Ver. 2.0 Procedure Differences

12/27/84 **MICR7** Print WordStar Files on Xerox 9700s

12/21/84 **SPSS16** Availability of SPSS at the University of Chicago - New Policies

12/21/84 **SPSS15** SPSS Version 9.1 to be Removed From Computation Center Systems

New in the DEC Notice File

02/06/85 **MICR12** Macintosh self-teaching guides at Usite

02/04/85 **MICR11** Micro-computers publicly available

12/27/84 **MICR8** Print WordStar Files on Xerox 9700s

12/27/84 **MICR7** Kermit for the Apple][,][+, //e Available at USITE

12/27/84 **SPSS13** Availability of SPSS Programs - New Policies

12/21/84 **SPSS12** SPSS Version 9.1 To Be Removed From Comp Center Systems

12/21/84 **MICR2** Availability of KERMIT

12/21/84 **MICR3** KERMIT documentation in DOCLIST

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the IBM 3081D, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of Superwylbur and TSO sessions is also provided. Statistics for the current month, the preceeding month, and the current month in the prior year are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs for the current month. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the current month, the preceeding month, and the current month in the prior year.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the month in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization in January 1985

Service Provided	IBM 3081/MVS January 1985	IBM 3081/MVS December 1984	IBM 3081/MVS January 1984
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	5:01	4:58	5:58
non-setup jobs	2:56	2:04	3:40
tape setup jobs	26:09	37:34	37:59
Total CPU-hours used	380 hrs 0 min	329 hrs 0 min	249 hrs 0 min
Superwylbur sessions	23,537	21,343	28,912
CPU hours	17 hrs 49 min	15 hrs 3 min	18 hrs 1 min
connect hours	17,564 hrs	16,460 hrs	21,076 hrs
average session	45 min	46 min	43 min
average CPU/session	2.73 sec	2.54 sec	2.24 sec
TSO sessions	3,371	2,806	4,486
CPU hours	4 hrs 25 min	3 hrs 21 min	5 hrs 50 min
connect hours	1395 hrs	1137 hrs	1636 hrs
average session	25 min	24 min	22 min
average CPU/session	4.72 sec	4.31 sec	4.41 sec
Jobs submitted	57,857	52,807	64,751
Steps executed	106,621	95,927	104,848

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs in January 1985

Program	Description	Percent	Count
WYLLIST	SUPERWYLBUR List Offline	9.99	11671
UCFLBL20	FILEBOL	9.79	11442
SASLPA	SAS	7.20	8416
SORT	SyncSort	4.91	5738
IBMDEC	IBM/DEC link utility	4.62	5400
IEBGENER	IBM file handling utility	4.02	4703
IEFBR14	IBM utility - null step	3.32	3874
MARKYBOL	Systems utility	2.79	3261
IEWL	Linkage editor	2.64	3088
SUCCESS	Operating Services utility	2.63	3071
FAIL	Operating Services utility	2.59	3027
BATCH204	Model 204 run in batch	2.07	2415
SPSSX	SPSS Version X	1.54	1802
PGM = *.DD	User defined routines	1.53	1790
IDCAMS	VSAM utility for catalog operations	1.38	1616
IELOAA	PL/I Compiler	1.13	1316
SCRIPTW	SCRIPT	1.03	1202
COMPUSET	Xerox text composing program	0.96	1126
IEHPROGM	IBM utility for dataset maintenance	0.85	998
RDUOC	User Application	0.85	990

CHIP - DECsystem-2060 Utilization in January 1985

Account Period	January 1985		December 1984		January 1984	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	84.6	5899	64.6	4580	74.6	5561
EVENING	32.3	952	27.2	779	19.3	968
OVERNIGHT	46.4	793	36.4	811	43.9	1091
TOTAL	163.3	7644	128.2	6170	137.8	7620

Top Twenty Chip Programs in January 1985

Program	Description	Percent	Count
OPR	Operator functions	8.91	5869
MM	Electronic mail manager	8.43	5552
EXEC	TOPS-20 command processor	7.24	4766
WINDOW	Full screen PTYCON	5.37	3534
SYSJOB	System job controller	5.29	3487
SHRSRV	File transfer daemon	5.29	3487
WATCH	Generates these statistics	5.29	3487
MMAILR	Network mail daemon	5.29	3485
SYSDPY	Operator interface with job queues	5.29	3485
IBMSPL	MVS link daemon	5.23	3443
MUSE	Full screen editor	5.11	3363
BITNET	Off-campus electronic mail network	4.92	3239
PTYCON	Pseudo-terminal controller	3.17	2086
EMACS	Full screen editor	3.15	2077
1022	Database system	2.56	1684
BATCON	Batch controller	2.44	1610
SENDER	Local mail daemon	2.26	1486
NCPCAL	Spreadsheet	1.95	1283
PEXEC	Test version of EXEC	1.75	1155
SED	Full screen editor	1.16	767

DALE - DECsystem-2060 Utilization in January 1985

Account Period	January 1985		December 1984		January 1984	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	78.8	6150	67.5	5024	85.9	7465
EVENING	26.3	1418	33.5	1707	33.4	2432
OVERNIGHT	42.3	1300	47.1	1700	51.5	1922
TOTAL	147.4	8868	148.1	8431	170.8	11819

Top Twenty Dale Programs in January 1985

Program	Description	Percent	Count
1022	Database system	21.72	19225
OPR	Operator functions	8.55	7570
SYSDPY	Operator interface with job queues	5.23	4625
SYSJOB	System job controller	4.84	4280
MMAILR	Network mail daemon	4.84	4280
WATCH	Generates these statistics	4.84	4280
WINDOW	Full screen PTYCON	4.83	4272
IBMSPL	MVS link daemon	4.78	4231
EXEC	TOPS-20 command processor	4.64	4109
SHRSRV	File transfer daemon	4.61	4076
MM	Electronic mail manager	3.62	3200
MUSE	Full screen editor	3.35	2964
PTYCON	Pseudo-terminal controller	2.87	2539
EMACS	Full-screen editor	2.58	2283
NCPCAL	Spreadsheet	2.22	1961
SENDER	Local mail daemon	2.04	1806
MINITB	Interactive statistical program	1.98	1749
BATCON	Batch controller	1.78	1578
DEMAND	Data management system	1.70	1504
EDIT	Line editor	1.44	1275

General Information

The Computation Center serves the academic and administrative computing needs of the University of Chicago. We operate an IBM 3081D under MVS, two DECsystem-2060s (called Chip and Dale) under TOPS-20, and a Pyramid 90x under UNIX.

Quick Reference Phone Directory

Center information: days	962-7615
Nights and weekends	962-7626

Account Information

PCA Accounts	Usite, Business Office	962-7158
Other new computer accounts and account changes		962-7158
User billing and records information		962-7159

Advice

Programming Problems	Program Advisor	962-7624
Questions about applications	Usite, Wieboldt 310	
Suggestions,Complaints		
Program Bugs		
Refunds		
Social Science Computing Advice	Pick Advisor	962-7892
	Pick 123	
Demo and Dev. Lab	5737 University	962-7151

Materials and Supplies

Tape-related services		962-7614
Computing Materials	Tape Librarians	962-7614
Sales of computer supplies	Tape Librarians	962-7614
Used Equipment	Deborah Gomben	962-7615

Microcomputers and Word Processing

Consultations with new and prospective users Office support services Advice on word processors, micros,terminals	Information Technologies and New Services	962-7174
Microcomputer Purchases	Micro Distribution Center	962-3452

Center Services

Requests for new software and data files		962-7166
Programmer/Analyst services		962-7166
Custom Print Services		962-6081
Production jobs that require special scheduling and handling	Expediting Group	962-7602
Dataset recovery from Center backup tapes		962-7621
Data entry services		962-7604
Terminal maintenance, communications problems		962-7663

Mailing Lists and Subscriptions

Center mailing lists		962-7159
Memoranda Subscriptions	Usite Business Office	962-7158
Newsletter subscriptions		962-7159

Courses and Seminars

Questions about Center courses and seminars	Educational Coordinator	962-7173
Registration for courses and seminars which require a fee	Usite Business Office	962-7158
Registration for courses and seminars which do not require a fee		962-7153
Classroom	Harper 406	962-6014

Terminal Clusters and Equipment

Terminal Clusters	Usite Wieboldt 310 Regenstein 201 Abbott 602A Pick 123 Crerar
Card Readers	Usite
Key Punches	Usite
Xerox 2700 Laser Printers	Usite, Pick

Documentation - On-line and Offline

	Offline	Online	
		MVS Superwylbur	Chip, Dale
Documentation	Terminal Clusters	pub doclist	doclist
	Usite Business Office		
	Regenstein Reserve		
	Harper Reserve		
	Bookstore		
Notice File		pub notice	notice

Dial-up Connections

MODEM	On Campus	Off Campus
All Systems 300 Baud	5-8880	753-0980
All Systems 1200 Baud	5-8890	753-0945
IBX DOB (all switches)		
300-1200-4800 baud	5-3600	
Telenet Network Address		
300 baud	31236A	
1200 baud	31236	

Gandalf Class Codes

System	Baud Rate			
	300	1200	4800	Telenet
MVS	mvs3	mvs12	mvs48	mvstn
CHIP	chip3	chip12	chip48	chiptn
DALE	dale3	dale12	dale48	daletn
PYRAMID	unix	unix	unix	

Bitnet mailing addresses

Computer	General address	Example
IBM 3081 (MVS)	logonid@UCHIMVS1	XASHALB@UCHIMVS1
DEC 2060 (CHIP or DALE)	username@UCHICAGO	STAFF.HAL@UCHICAGO
Pyramid 90x (SPHINX)	person-id%SPHINX@UCHICAGO	HALB%SPHINX@UCHICAGO

Computation Center Administration

Computation Center Director	
Carolyn D. Autrey-Hunley	962-7690
Assoc. Director, Operations and Technical Services	
John E. Iannantuoni	962-7616
Asst. Director, Instruction and Research Information Services	
Harold C. Bloom	962-7155
Asst. Director, Information Technologies and New Services	
George R. Bateman	962-7174
Asst. Director, Administrative Information Services	
David E. Trevvett	962-6018

Newsletter Subscriptions
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

Newsletter Subscriptions
University of Chicago
Computation Center
5737 S. University
Chicago, IL 60637

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
_____

City
_____

State   Zip
_____

UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Research Institutes

Searle

Cummings   Jones   Ryerson-
                     Eckhart

Abbott

Walker

Woodlawn

59th St

ETHERNET

In Place
Proposed

Computation
Center

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GENERAL NEWS

Campus Network Is Growing

— Dru Allin

The Ethernet project — designed to provide a high-speed communications network among several distributed University computing sites — is connecting sites as planned and is already being extended to include additional sites.

The cover of this *Newsletter* is a diagram of the Ethernet on campus. The solid lines show the central fiber optics cable linking five campus buildings: Research Institutes, Ryerson/Eckhart, Walker, Cummings, and Searle. These five "arms" meet at a common point in Jones and are joined by an optical mixer. The mixer can handle up to eight arms, and each arm can carry up to three parallel paths, so the network can grow with expanding communication needs. The patterned lines in the network diagram represent proposed extensions to the hospital complex and to the Computation Center's future location at 1155 E. 60th St.

As of this writing, three sites are connected and functional. These are the Computation Center's Pyramid (sphinx), the Computer Science Department's Pyramid (anubis) and VAX (gargoyle), and a cluster of computers at Astronomy and Astrophysics, which includes a VAX780 (oddjob) plus a cluster of four Sun workstations and four Apollo workstations. The Academic DEC-20 at the Graduate School of Business (acad) and one of the Computation Center's DEC-20s (chip) are expected to

be added by the publication date of this *Newsletter*. The actual connection will be announced online on all machines.

The Ethernet utilizes the Internet Protocol (IP). IP supports the file transfer protocol (FTP) and remote logins (via telnet). The *man* pages for *FTP* and *telnet* on UNIX machines explain how to use these facilities.

To help users transfer files between machines, the Center is supporting a public holding directory on sphinx to which users can transfer files. The intended recipient can copy the file from the public directory to his or her own directory. This will make the transfer of non-mailable files or load modules relatively easy, and free of security violation problems. To use this facility, logon to the sphinx, and enter the *ftp* program, using *sphinx* as the host name, for example:

% ftp sphinx

You will be connected to the *ftp* server and prompted for a "Name." Respond with the name *ftp* and when a password is requested, type *anonymous*. You will receive messages that your "guest login" is ok, and will be left at the prompt:

ftp >

Entering a question-mark at this point will reveal the list of commands you may use. The command *quit* will break your connection to this directory. Similar facilities will soon be available at other sites on the Ethernet.
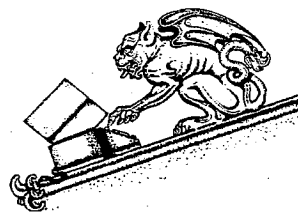
Computation Center to Move to 1155 E. 60th Street

— *Don Crabb*

The University of Chicago has purchased the former American Bar Association building at 1155 E. 60th Street. Since a new name for the building has not been determined, it is currently referred to simply as "1155." The building is being renovated for fall occupancy by a number of tenants, including the Computation Center.

The reasons behind moving the Computation Center can be traced back to a study made by the Evaluation Committee on Computing Activities in 1980. Their report to the President stated that:

> The Computation Center is severely handicapped by the lack of adequate space. The computer equipment is located in totally inadequate space that is so cramped that proper maintenance, operation, and user access is not possible. The staff is distributed in a way which hinders communication both among themselves and with users and makes management difficult. The high density of people in many offices reduces staff productivity. Lack of space substantially impedes University efforts to upgrade and organize computer equipment in the most cost-effective way and to recruit competent staff.

Since that report, the University has attempted to find suitable space for the Center, but without success. The need for space has also increased. The Center now has two more mainframe computers than in 1980, four times the number of disk drives, two 9700 laser printers, and a volume of computing and printing that is three times what it was in 1980.

All of the Center's current operations, with the exception of the Microcomputer Distribution Center (MDC) and the terminal clusters, will be located on the third and fourth floors of 1155. The MDC will be located elsewhere on campus, and we hope to have an announcement on its new location in the Fall *Newsletter*. There will be an Input/Output area at 1155, similar to that at the current operations site (Osite). However, unlike Osite, there will be terminals available at 1155 for submitting jobs or for other short time use.

We expect that our offices will be moved early in the fall and that the machines will be moved over the Labor Day weekend.

Academic Year End: Extend Accounts, Plan Summer Data Storage

— *Dru Allin*

Our Year-end Policy

Many accounts expire at the end of the academic year, June 30, 1985. Owners of these accounts may arrange to extend the account termination date by contacting the Business Office at 962-7159. The account extension will guarantee uninterrupted service — otherwise you may find that the account has been locked and its files have been transferred to tape. Our year-end policy is as follows:

PCA accounts which are owned by a student who is not currently registered for classes (including the summer quarter), or PCA accounts which have expired or are out of funds, receive special handling. All DEC and IBM datasets for these accounts are transferred to tape and removed from disk by the Center. There is no charge to the user for moving the data from disk to tape. There is, however, a charge of $15.00 for having any or all of the datasets restored to disk by Operating Services personnel. That $15.00 cannot be charged to a PCA account.

Non-PCA accounts on the IBM or DECs are han-

dled differently. Tapes and disk files charged to an expired account continue to accrue charges. It is the user's responsibility to delete disk datasets and return unneeded tapes. This policy prevents the possible loss of important data.

PCA and non-PCA files on the Pyramid are handled as follows. Pyramid directories are first moved to a holding directory for two weeks, then are transferred to tape. Pyramid users may submit their own restoration requests by using the *arcrest* command; the *arclist* command can be used to list files in the archives.

Plan your summer computing needs now so that you don't return in the fall to unexpected storage charges or a locked account.

Tape May Save You Money on Summer Data Storage

Many of you who are leaving for the summer will be wondering whether to store your data on tape. If your disk storage charges are more than $6.00 a month ($24 for the summer), you save money by transferring the data to tape, since tape purchase or rental will cost approximately $20 to $25.

The decision whether the money saved is worth the trouble of putting the data on tape is left to the individual user. To estimate storage costs, you should know the following:

For the IBM, disk space storage of about 20 tracks (19254 characters/track), for 4 months at 1 cent per track/day will cost about $24. To find out how many tracks you use, do one of three things: 1. Check the VTOC listing at the advice desk at Usite, 2. Run USERVTOC, documented in Memo 4075, or 3. Use the SuperWylbur macro, FINDSN and ask for *full* information on datasets. This may produce a large amount of information.

On the DECs or the Pyramid, the unit of storage is the page. To find the number of pages you are currently using on the DEC, use the *VDIR* command on each structure where you are storing data. About 70 DEC pages can be stored for the summer for $26. The Pyramid "page" costs less than the DEC page — about 140 can be stored for the summer. Use the *ls -lga* command to learn the

number of bytes you have in use. There are 2048 bytes/Pyramid page.

If you decide to buy or rent a tape see *Magnetic Tape Use* (R114, TAPEMAN in Doclist) for more complete information.

A video tape describing the use of magnetic tapes is also available. Contact the cluster assistant at Usite if you wish to view that tape.

Programs that are recommended to restore files to the same Center computers are:

> For the IBM, MOVESTOR
> For the DECs, DUMPER
> For the Pyramid, TAR.

No Evening Advice or Classes for the Summer Quarter

In keeping with last summer's policy, there will be no weekend or evening program advisor at Usite during the summer quarter. There will be a program advisor available at Usite each weekday from 9:30 a.m. to 12:00 noon and from 1:00 p.m. to 4:30 p.m.

The Center is not offering any of its standard computing classes this summer, except for the course on Model 204 described elsewhere in this *Newsletter*. This is due to reduced instructor staff availability and the lack of attendance at last summer's classes. Although there will be no "live" classes, there are several classes available on videotape at Usite. See the cluster attendant for a list of videos.

Some Rates Increase on June 1

In January and April of 1983, the Computation Center reduced many machine-related service charges. The overall effect for internal academic users was a 25% reduction during daytime weekday periods and a 50% reduction during evening, early morning, and weekend periods. Additionally, professional service fees were reduced by 10%.

Due to increasing costs, the charges for a number of labor-related services will be increased effective June 1, 1985.

For internal academic customers, charges for services such as data entry, expediting, and communications equipment installation, maintenance, and repairs will be increased by approximately 10%. Low and normal priority MVS tape mounts will be increased by approximately $1. However, not all labor-related rates are being increased. For example, the 9700 printer setup charge for normal and high priority use will be reduced.

Rates for external academic and external nonacademic customers will also be adjusted, but by amounts different than those noted above.

The effect for the average customer will depend upon the extent to which the specific services are used, but the total bill for most customers will increase by less than 3%.

The new rates will be printed in memoranda 4170 (for internal academic customers), 4169 (for external academic customers), and 4168 (for external nonacademic customers.)

Comparing Execution Times for Different Computers

— Joan McGrane

Many researchers now have access to different types of computers. Software applications which previously existed only on large mainframes are now becoming available on mini- and microcomputers. Each type of computer offers advantages and disadvantages for any specific application. In choosing a computing environment for a project or particular analysis, it may be helpful to consider the amount of time various machines take to execute a program.

A test comparing the performance of various computers was conducted by the Vogelback Computing Center of Northwestern University. The information presented here is drawn from the report of the test findings prepared by Dan Garside, manager of the microcomputing lab at the Department of Preventive Medicine and Community Health, Northwestern Medical Schools.

Description of the Program: Alan Dyer's Cox Regression program, written in Fortran IV, had been on Northwestern's Cyber computer for several years. This program was designed to deal with large sample sizes by using temporary disk files during execution. It thus combined extensive numerical computation with considerable disk-based binary I/O. Dan Garside converted the program to Fortran 77 for testing on the other computers.

The Data: A sample from the Western Electric Study was chosen. It consisted of four variables and 1972 cases. The number of variables and cases was chosen to represent a real research problem and yet fit all files and program on one diskette.

Results: The statistical results from the different computers were identical to eight decimal places.

The execution time comparisons are displayed in the accompanying graph. The time charted is real

clock time. For the Cyber, it is execution time. For the others, it is the difference between the start and the end of the execution step.

The labels on the graph refer to the following machines:

Cyber — A Cyber mainframe.

VAX-5usr — A VAX 11/780 with 5 users logged on.

VAX-19usr — A VAX 11/780 with 19 users logged on.

AT-copro — IBM-AT with numeric co-processor and hard disk.

XT-copro — IBM-XT with numeric co-processor and hard disk.

XT — IBM-XT without numeric co-processor but with hard disk.

PC — IBM-PC without numeric co-processor and without hard disk.

The test was also run using an IBM-PCjr with 128K memory and one disk drive. Although not graphed, the program worked fine, using 6060 seconds.

The Computation Center is acquiring the program and data in order to run time comparisons on our computers. The results will probably appear in the Fall *Newsletter*.

Cox Regression Timings on 6 Computers
Fortran 77 Program, 1972 Cases, 4 Variables

Bar chart — Execution Time in Seconds vs Type of Computer:

- Cyber: 21
- VAX-5usr: 51
- VAX-19usr: 225
- AT-copro: 244
- XT-copro: 501
- XT: 2940
- PC: 3060
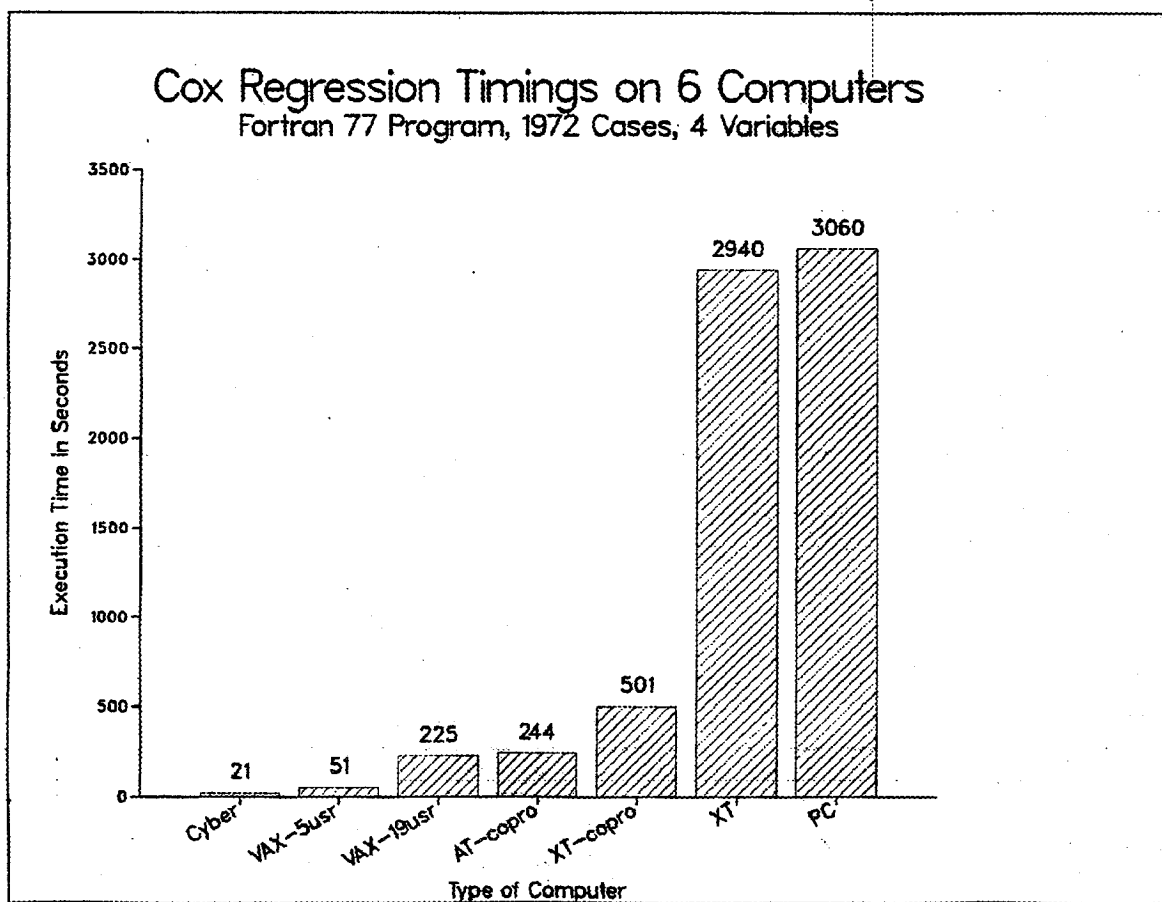
New Video Instruction Tapes at Usite

Computation Center seminar instructors and staff members have produced several new instructional videos. A number of these new videos have already been added to the video library at Usite, and several other videos should be completed before the beginning of Summer quarter. All videos in the library can be viewed free of cost at Usite. See the attendant for an updated listing of our video offerings, or to view one of the videos. The new or soon-to-be released videos are described below.

Apple computers at the University of Chicago: This 17 minute video, presented at the Apple Inter-University Consortium meeting at Stanford, describes the proliferation of Macintoshes on campus, and then notes some of the software development efforts that are taking place at the University of Chicago. Software developers on campus discuss the role of the Macintosh in mathematics curriculum development, Greek font development, telemetry testing of satellite modules, cell mass measurement, and remote control of a telescope.

EMACS I: Introduction to EMACS: This video provides an introduction to EMACS, a full screen editor on the DEC-20 and on the Pyramid. This introductory module covers file management within EMACS, basic cursor movement, and deleting text.

EMACS II: Further commands: Among the topics covered are searching for character strings, handling errors, marking regions for moves or deletions, the use of buffers and windows, and different modes of operation.

Magnetic tape storage: Magnetic tapes can be used to decrease storage costs and to transport files to other computer systems. This video describes the basics of magnetic tapes and introduces the various tape utility programs that are available at the University of Chicago. Consider-

ation is given to preparing files for transporting to other computer systems.

DEC-20 I: Overview: The hardware associated with the DEC-20 environment is reviewed with an emphasis on the software available at the University of Chicago. The intent is to provide a quick working knowledge of the DEC. The video moves quickly into getting started, logging on, the basics of the keyboard, control characters, and resources available to the DEC user.

DEC-20 II: File management: The hierarchical structure of the DEC-20 working environment is examined, as are the basics of file management, including creating, viewing, copying, deleting and undeleting files.

DEC-20 III: Further procedures: A range of topics are covered in this video, including MM, (an electronic mail system), setting file and directory protection, and creating an electronic 'photo' of your terminal session. Also, procedures are described for recovering from a traumatic exit from a program.

DEC-20 IV: Introduction to editing and printing: This video overviews the editors/formatters on the DEC-20 and describes the procedures for producing printed output.

UNIX IV & V: These videos discuss a range of topics including the basic editor—ED, shell scripts, command processes, and information regarding the configuration of UNIX on the Computation Center's Pyramid.

The Superwylbur series: This short set of videos provides a working knowledge of Superwylbur , the most widely used terminal system on the Computation Center's IBM 3081D. The basics of entering and editing text, file management, setting up a profile, RJE (Remote Job Entry), and printing are covered.

DATA RESOURCES

— Melissa Trevvett

Library Adding ICPSR Codebooks To Its Collections

The Computation Center and the University of Chicago Library have developed a procedure to add codebooks from the Inter-University Consortium for Political and Social Research (ICPSR) to the Library's collections. This action will complement the collection of codebooks now housed in the Social Science advisor's office (Pick 123). The codebooks in the Library will be non-circulating so that users may browse through the collection, examining and comparing studies. The Regenstein location also provides larger and quieter space for reviewing the codebooks than the current location. In addition, the codebooks will be available all hours that Regenstein is open.

The codebooks are located in the General Reference Department on the first floor of Regenstein Library. They are shelved by call number within the basic reference collection to the north of the reference desk. At this time, the collection consists of sixteen codebooks; others will be added as more ICPSR studies are ordered. Users having questions about the collection should see one of the reference librarians.

The titles in the library's collection can be located through the online terminals to the Library Data Management System (LDMS). To obtain the list of

titles:

1. press the HOME key,
2. type FIND,PRJ = CDBK,
3. press the ENTER key.

The cataloging information for each codebook will refer to the ICPSR study number, so that users can go directly to the ICPSR manual available from the Computation Center to obtain the information needed to access the study.

The Library will collect only printed codebooks from the ICPSR; it will not collect machine-readable versions of codebooks. Codebooks which the Inter-University Consortium issues in machine-readable form are available on the tapes stored by the Computation Center. The ICPSR manual lists those studies and indicates which have machine-readable codebooks and which tape files contain the codebooks. To obtain a copy of the manual, request ICPSR through the DOCLIST program. To obtain information about studies ordered since the manual was updated, contact John Raz, Social Science Advisor, 962-7892.

American Election Study for 1984

The Inter-University Consortium for Political and Social Research has recently released data from the American National Election Study for 1984. The version now available comes from the Center for Political Studies. At this time, only two files from this study are available — the pre/post election and the continuous monitoring files. If you want to order this data, see John Raz at Pick 123. The ICPSR study number for these files is 8298.

MVS

Custom Laser Printing Services

— Chuck Hodge

Custom laser printing provides a wider range of printing than is available using the standard tools. The Computation Center offers custom printing services in support of a broad range of applications:

- Direct mail letters (letter head, signatures, logos)

- Formatted reports (special paper, text merged with illustrations)

- Custom forms design (forms designed to customer's specifications)

- Custom page layouts (camera ready copy, copy proofs)

- Custom printing of on-demand documents (newsletters, monographs, brochures)

Laser printing offers improved print quality and the capability of printing with a variety of type styles and font sizes. From first to last, each page of a laser printed document is of the same print quality — each page is an original.

Custom print services provide the user community with the benefit of immediate cost savings. No longer is it necessary to warehouse forms or to incur waste associated with revisions to existing stock. Pages are designed to meet your specifications and stored electronically for on-demand printing.

The Center's custom print services combine the quality of laser printing with extended printing features for printing text merged with illustrations. Electronic forms may also be produced. Pages composed of text, line drawings, charts and graphs, digitized art, and forms can be designed to your specification.

For information on custom print services, contact:

> Chuck Hodge
> Computation Center
> 5737 S. University
> Chicago, Il. 60637
> Phone: (312) 962-6081

New Products on the IBM 3081

Updates are being made or have been made to software products on the IBM 3081. Logon messages inform you when these changes occur and what effect they have on your computing. In most cases, the new releases correct errors in the old versions rather than add substantial new capabilities. Although we expect no transition problems, contact the program advisor (962-7624) if problems arise after the newer versions are installed.

New ACF2 Release

ACF2 release 4.0 is being installed on the IBM 3081D. It should be the production release by the end of June. The new release contains a number of technical enhancements which will be of interest to the general user community. Watch the logon messages and Notice file for futher announce-

ments.

New Release of COBOL

Release 2.4 of VS COBOL has been installed into the MVS production system. This new release fixes a number of bugs present in the old release.

New Superwylbur Version

Over the summer, a maintenance update for Superwylbur will replace the current version. The new release fixes some bugs and provides the base for future enhancements. There should be no problems or changes in the way Superwylbur is used. Watch the logon messages for further announcements.

New Version of Treatise Now In Production

A new version of Treatise was installed as the production version on March 29, 1985. It is described in Memo 4373, *New Test Version of Treatise Features*.

Although this version of Treatise was tested before installation, those tests could not totally reproduce the combination of commands used by individuals. Since it is now being used extensively on campus, some problems may arise. All such problems will be posted to the Notice file.

If you need to use the older version of Treatise, you may select it in response to prompts in the Treatise macro on Superwylbur. Contact the program advisor at 962-7624 if you experience any problems with the new Treatise.

Model 204 Course Offered on Campus

The Computation Center will again offer its *Introduction to Model 204* course this summer. Tentatively scheduled for late June and early July, the course offers seven half-days of instruction (spread over a 10-day period) in the Model 204 data base management system. Topics include Model 204 User Language, full-screen applications, and the development of large-scale systems in the Model 204 environment.

This course was developed jointly by the Computation Center and the Information Systems Coordinator of the College. It requires pre-registration and costs $200/person.

To register or to obtain additional information, contact Clark Wilson (962-8871) in Administrative Information Services.

The IBM 7171 Protocol Converter

— Kay Sandacz

A new protocol converter, the IBM 7171, was installed at the end of March, replacing the IBM 4994. The immediate impact of this new equipment was apparent to a limited group of users — those who make use of full-screen capabilities on the IBM through Model 204 or ISPF. The improved technology of the 7171, however, may make these capabilities available to more users. Unlike the 4994, which was adapted to perform as a protocol converter, the 7171 was specifically designed as a protocol converter. In addition, it costs less than the 4994 and performs faster. This provides the potential to allow wider access to full-screen IBM environments; for example, CICS users may soon

access the IBM 3081 through the 7171.

A protocol converter is necessary for most termi-
nals to use full-screen IBM features. Most terminals
at the University of Chicago are ASCII terminals
and communicate asynchronously. An ASCII termi-
nal uses the ASCII character code to represent
characters internally; the IBM uses the EBCDIC
character code. Asynchronous terminals send each
character to the computer as it is typed, with start
and stop bits to mark the start and end of the
character code. When you use an ASCII terminal in
an MVS session, a communications controller
translates the code from your terminal into a form
the IBM 3081 understands.

There are terminals which can communicate di-
rectly with the IBM; such terminals are generically
referred to as "IBM 3270s" even though new
models have come out since the original 3270. In
addition, other non-IBM terminals and personal
computers are able to emulate 3270 protocol. The
3270 class of terminals uses the EBCDIC code to
represent characters internally, so no translation is
needed. These terminals also communicate bisyn-
chronously — the sending and receiving of data is
synchronized, so no start and stop bits are re-
quired. The 3270 terminals send an entire buffer of
data at a time, rather than sending each character
as it is entered.

Although 3270 terminals communicate efficiently
with the IBM, they can't "speak" directly to other
types of mainframe computers, such as the DEC.
In fact, such terminals are generally connected to a
3270-type cluster controller, which uses a dedi-
cated line to the IBM. (CICS applications currently
run under such a configuration here at the Univer-
sity of Chicago.) The 3270 terminals usually cost
more than ASCII terminals as well.

The 7171 protocol converter has advantages over
both systems described above. It can take advan-
tage of features, such as the full-screen capability,
that many ASCII terminals now have. The commu-
nications controller that usually translates from AS-
CII terminals for the IBM cannot handle these fea-
tures. The 7171 allows the user to continue typing
even while data is being transmitted, rather than
locking the keyboard as a real 3270 does. This
means that it can keep up with the speed of a

typist. The 7171 also provides a variety of setup
functions, depending on the terminal in use.

There are some disadvantages to the 7171 as well.
Each terminal type has to be identified — the
codes it will send and how to interpret them have
to be programmed into the 7171. There are limita-
tions on the number of terminal types that can be
defined this way, and some terminal types are
pre-coded by IBM and cannot be redefined locally.
The layout of the keyboard varies from terminal to
terminal and you must have a listing of which key
combinations on the terminal type you are using
will perform what function. A listing can be found
on the IBM in !SYS.ISPF.TERM7171%terminal
where "terminal" is the terminal type you are in-
terested in. In order to discover which terminals
have been converted, logon to Superwylbur and
issue the command:

? show members in !sys.ispf.term7171

Although there are limited applications for the IBM
7171 at this time, it represents a significant step
toward the installation of a variety of full screen
products on the IBM 3081.

Tables: A New SPSS-X Program

Tables is a new optional program available with
SPSS-X. That is, we must pay an additional fee to
SPSS Inc., if we wish to have it.

Tables facilitates the production of camera-ready
tables for presentation or publication. Although it
uses defaults, it allows you to have complete con-
trol over the physical structure of a table. In addi-
tion, multiple tables may be concatenated in the
same display and multiple subtables may be nested
in all dimensions.

The tables are produced in appropriate boxes, and

there is even an option to produce a University of Chicago dissertation style table.

Since it does cost extra, the Computation Center will not acquire it unless there is strong support from users. If you wish to have Tables installed, please contact the Manager of Application Systems, Don Goldhamer, at 962-7166.

TOPS-20

Tops-20 Version 6.1 Installed on Chip

A new version of Tops-20, version 6.1, has been installed on Chip. This version includes some new features, supports the soon-to-be installed Ethernet local area network hardware, and incorporates many bug fixes.

Chip is a field test site for DEC's version 6.1 of Tops-20. We are one of a group of eight DEC customers to receive this release first. The regular release of this version of Tops-20 will take place sometime next fall.

Since this is a field test version of Tops-20, some system instability can be expected. Notes, comments and problems should be documented in mail sent to V61-TEST. These comments and notes can be read in MM by executing the following:

@MM BBOARD V61-TEST

All the new features may be found in NOTES:V61-EXEC-CHANGES.TXT as well as in new versions of the standard Tops-20 manuals available in the terminal clusters, library reserves, through DOCLIST, and online in V61-MAN:.

Two of the most useful manuals are the *Commands Reference Manual*, a manual which documents each of the Tops-20 EXEC commands and *Tops-20 User Utilities*, which documents the Tops-20 Utility programs such as SORT.

The DOCLIST names for these manuals are as follows:

Name	Title of Manual
CMDREF	Commands Reference Manual
MONUSR	Monitor Calls User's Guide
MONREF	Monitor Calls Reference Manual
LINKREF	Link Reference Manual
TTUSRUT	TOPS-20 User Utilities
TTUSRGD	TOPS-20 User's Guide

Further information about the number of pages and approximate cost for printing these manuals may be found in the DEC-20 notice file entry DOC9.

Version 116A of 1022 Is Now Production

Version 116A of 1022 has been made the production version. It offers several new features. There are string handling functions to manipulate character data. The JOIN command has also been added. This allows you to relate one dataset to another (similar to the MAP command) and to refer to variables in either dataset thereafter. However, Fortran-6 is the only version of Fortran available as a host language interface.

File formats in the new version of 1022 are different from those of previous versions. For this reason, two new commands have been added: BACKTO and UPTO. The UPTO command allows you to change a file created under a previous version of 1022 to the new format. It is not required

that you do this as the files will be usable in their current format; however, 1022 will function more efficiently if the files are reformatted.

Files created under version 116A cannot be used in previous versions of 1022. You must use the BAC-KTO command to reformat a file (while in version 116A) before trying to use the file in a previous version of 1022.

The manuals for version 116A of 1022 have been available through DOCLIST for some time. The new features are designated by a vertical bar in the left margin next to the description.

The DOCLIST names for the 1022 manuals are as follows:

Name	Manual
TN22HST	Host Language Interface
TN22IRG	Interactive Report Generator
TN22REF	1022 Reference Manual

PYRAMID/UNIX

Archiving Policies in Effect on the Pyramid

— *Dru Allin*

Archival of User Directories

The Center transfers directories or files on the Pyramid to its tape archives for three main reasons:

1. The project has expired.
2. The project has run out of funds.
3. The person in whose directory the files reside has been removed from the project that pays for the file's storage.

The project administrator is notified via electronic mail whenever such directories are found. They are first moved to a holding area for two weeks, and during this time directories may be retrieved by the owners without charge. You may locate archived material still on disk by looking in:

/arc/u1/your-home-directory

The owner may copy them from there with no problem. The *-r* option on the *cp* command will recursively copy back all subdirectories.

Any files or directories in the disk archive that are over two weeks old are moved to tape. There are two new commands on the system that allow users to access tape archives. These archives include datasets from Usenet sources as well as locked directories. The commands are *arclist* to list files in the archives; and *arcrest* to make file restoration requests. There are *man* pages that describe these commands.

To avoid having your files archived at the end of the quarter, use the *chgrp* command to change the ownership of the directory to a project that will remain unlocked. Use the command *ls -lgd* while connected to your home directory to discover its group ownership. Use the command *groups* to find out what groups (projects) you are in.

When you login to the Pyramid, your default project is shown in brackets. If your default project is locked, and you specify an unlocked project when logging-in, the default project will be changed to the new (unlocked) project. Additionally, the group in all the directories that extend from your login directory will be changed to the new group.

To find the default project, use the command:

chproj person-id.

Archival of Usenet News-groups

At the present time, Usenet news-group messages are also archived.

The command,

arclist -u subject-name

is valuable for searching out items of particular interest.

Upgrades to the Sphinx Computer

Over the past several months, the usage of the Pyramid 90x computer (sphinx) has grown to the point that it can be difficult to connect to the machine. The 26 available terminal ports are sometimes filled after noon and until 8 p.m.

To help alleviate this port contention problem, the Center is acquiring 16 additional ports and an additional terminal processing unit. The addition of the 16 ports will make it easier to connect to the sphinx during the hours of the day the machine is used most heavily. Because the ports are connected through the use of the dedicated terminal processing unit, the addition will not degrade the overall performance of the sphinx (although, of course, the overall response of the machine will be degraded somewhat when there are close to 40 concurrent users).

The sphinx still has plenty of excess capacity during the later evening hours and early in the morning, and users are encouraged to use the machine at these times.

MICROCOMPUTING

Macintosh Development Update

— *William Sterner*

More than 2,000 Macintoshes have been sold on the University of Chicago campus. In response to user interest, the Computation Center released a standard "Macintosh Developer's Agreement" for faculty, staff and students early in 1985. This agreement provides the official framework for technical and administrative support of Macintosh software development on campus. A person may become an authorized developer and use this support for a nominal fee of $150.

In March, representatives of the Computation Center attended the Apple University Consortium (AUC) meeting to share information and software. As part of its presentation at that meeting, the Center prepared a 17 minute videotape of some of the Macintosh software development projects already underway in the physical, biological, social sciences, and humanities. The tape may be obtained from the cluster assistant at Usite and viewed there. Some of the projects using the Macintosh are described below.

Robert Loewenstein of Yerkes Observatory is developing a remote control "instrument panel" for use with a new 3.5 meter telescope to be built in New Mexico. The panel will allow a user to connect to the observatory through a satellite link, switch in one of seven instruments, open the dome, position the telescope and take data. Thus, the observer

will have real-time feedback on the quality of the data as well as control over the telescope from anywhere.

The Macintosh will collect data from two types of infrared detector arrays. One is a 32 channel spatial array that is displayed in 2 kinds of strip charts. The other is a linear array of 32 channels that handles spectral data that is displayed as a graph of the raw spectrum. The prototype version of the program consists of 5 windows: 3 data and 2 control. It was written on a 512K Macintosh in a beta release of Kriya Systems' Neon.

In the Pharmacology and Physiology Department, Stephen Sellers has written a program for the image analysis of photomicrographs of brain cell aggregates. Done in Microsoft Basic, the program aids in the calculation of aggregate areas, cell counts, tissue volumes, statistical analysis, and report writing. The application utilizes the mouse to trace a 35mm slide image projected onto the Macintosh screen to replace time consuming manual procedures.

The National Opinion Research Center (NORC) has developed two data acquisition programs for use in telephone and field surveys. These programs were written in the Macintosh XL cross-development environment by William Mudge with the goal of increasing data integrity and lowering acquisition time.

The Laboratory for Astrophysics and Space Research is using a Macintosh XL to perform bench tests, accelerator calibration, and, eventually, data selection from spaceflight instruments that measure cosmic rays. The instruments consist of an array of silicon detectors which are reverse-biased diodes that produce a pulse when ionizing radiation passes through them. This work is being done by James Beatty and others under the direction of John Simpson.

Alan Hoffer in the University of Chicago School Mathematics Project, funded by Amoco, is working on educational software for grades K-12. The intent of that project is to use graphical concepts for teaching mathematics. Zalman Usiskin, also a member of that project, has used a Macintosh XL to compose a text called, *Transition Mathematics*. It

will be phototypeset through an interface with a Compugraphic device.

Significant work is also being put into alternate font development on campus. Classicists are using a Greek font program, called GreekKeys, that is available from George Walsh. That package includes two different fonts, a keyboard driver with eleven "dead" keys, and a MacTerminal document that displays both Greek and English.

Other scholars at the Oriental Institute, Argonne and several other departments have also created specialized fonts. Some of those created here are: Gaelic, Cyrillic, Hebrew, Tamil, Devangari, Vilne, and Armenian. There are many other fonts available from other AUC schools.

Besides these ongoing projects there are several other efforts beginning on campus. The Center for Research in Security Prices is planning to utilize Macs as intelligent workstations for a UNIX system. Linus Schrage of the Business School is working on a version of Lindo for the Macintosh in Absoft's Fortran. Greg Colomb has proposed using Macs for a pilot writing program for first year Humanities Core students. Finally, MacPascal is in under evaluation by the Computer Science department in a subsection of their introductory computing courses.

If you are writing or planning to write software for the Macintosh, please let Bill Sterner (962-7172) or Stuart Schmukler (962-7630) know about your projects.
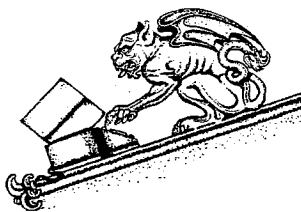
MacWrite, MacPaint, and System Disk Update

— Joan McGrane

Apple Corporation, Inc. has recently released MacWrite, MacPaint, and System Disk updates. This software has been made available to members of the Apple University Consortium so that users may copy the updates onto their own disks.

In addition, a modified version of the new MacWrite has been provided. It allows keyboard equivalent commands for most of the menu items. However, it is not a supported version and you use it at your own risk.

Updating Your Macintosh Diskettes

The updated Macintosh software can be copied by users who purchased their Macintosh microcomputers from the Computation Center. The software updates and instructions for making your own copies are available from the cluster assistant at Usite, 310 Wieboldt.

You must bring your staff or student identification card and your old system diskette to Usite in order to use the Macintosh updates. You will also need three blank diskettes for the copies. The new features and enhancements are described below.

New MacWrite Features

A new version of MacWrite has been released which provides additional capabilities for text handling. According to Apple Inc. announcements, the new features include:

- handles much larger documents

- spacing can be set to 6 lines per inch making it easier to print on standard forms

- a current page number indicator allows you to locate specific pages

- FIND NEXT command has been added to the search menu, making it easier to find a specific word in the text

- GO TO PAGE NUMBER command has been added to the search menu, allowing you to go instantly to a particular page

- LEFT, CENTER, RIGHT, FULL, and DEFAULT commands are available in the format menu, allowing you to select and format text without inserting rulers

MacPaint Improvements

The new version of MacPaint has the same features as the current version, except that it performs faster. Other improvements include:

- fully utilizes the smoothing algorithm in the LaserWriter Printer to improve output
- has an improved interface to MacDraw

The New Finder

The new Finder (version 4.1) is faster than the old version and it works better with hard disks. However, it does not yet have a true hierarchical system. It also has some added features such as the Minifinder, which lets you move quickly among the applications and documents you use most often. The new Finder works with any existing applications and documents without your having to make any changes to them.

Macintosh Source Directory Available on Pyramid

A directory containing materials of interest to Macintosh users is now available on the Pyramid. To see the contents of this directory, logon to the Pyramid and type:

% ls /usr/sun/mac/news__src

There are many types of down-loadable programs: including utilities, desk-accessories, games, and more. Source code is sometimes available, and there is some documentation, albeit scattered. Explore the contents of this directory and use whatever strikes your fancy.

Kermits Galore!

— *Vivian Nix*

CPM Version: A new Kermit for CPM-based microcomputers, including both the Kaypro and Morrow, is now available at the Usite Business Office for $15.00. It allows files to be transferred between those microcomputers and the Computation Center mainframes (DEC-2060 and IBM 3081). The Kermit packet contains a diskette with Kermit, a copy of the memo explaining its use, and a copy of the *Kermit User's Guide.*

IBM-PC Version: For the IBM-PC, a new command, SET INCOMPLETE, forces an incomplete file to be saved whenever something interrupts the transmission. This is particularly useful for transferring large (over 2500 line) files, which are more likely to experience problems in transmission.

Macintosh Version: Work is underway to provide a Kermit for the Macintosh. Several existing Kermits have been tested with the Macintosh, but none provided enough of the functions required for this campus. Center staff are now working to modify a Kermit to meet our requirements. As soon as testing and documentation are complete, the Kermit will be released. Watch the notice file and system messages for more details.

An alternative file transfer program for the Macintosh may be ready before Kermit. MACGET and MACPUT for the DEC-20 will soon be available to the public. (They are both on the Pyramid in /usr/sun/mac/bin.) These programs allow Macwrite documents to be transferred between the DECs and a Macintosh. Again, watch the notice file and system messages for details.

Downloading/Uploading SPSS-X Files

— *Joan McGrane*

The EXPORT and IMPORT commands in SPSS-X make it possible to transfer SPSS-X system files between computer systems. The EXPORT command creates portable files which can be read on different computer systems using SPSS-X or other software applications which use the same portable file format. Portable files can be read in SPSS-X using the IMPORT command. These two commands are particularly useful for transferring SPSS-X files between the Computation Center's IBM 3081D and microcomputers running SPSS/PC. The following sections of this article present typical sessions for downloading and uploading files between the IBM 3081D and an IBM XT microcomputer.

Downloading Files from the IBM

The first step is to prepare an SPSS-X portable file using the EXPORT command specifying the TYPE = COMM option. You do this by running a

batch job on the IBM:

```
//jobname JOB logonid,'pgmr name',REGION = 512K,
//  MSGCLASS = X,TIME = (,20)
/*JOBPARM ROOM = delivery
//  EXEC SPSSX
//sysfile DD DSN = logonid.system.file,UNIT = SYSDA,
//  DISP = SHR
//portable DD DSN = logonid.portfile,UNIT = SYSDA,
//  DISP = (NEW,CATLG),SPACE = (TRK,(10,5),RLSE)
FILE HANDLE sysfile/(file specifications)
GET FILE = sysfile
EXPORT TYPE = COMM/ OUTFILE = portable
```

On the microcomputer side, you must run the Computation Center's Kermit for the IBM PC. This is available from the Computation Center Business Office at Usite for $15.00.

To run SPSS/PC on your microcomputer, you must have it installed on the internal hard disk (the SPSS/PC program itself requires 3 megabytes) in an \SPSS directory. Do not download the portable file into the \SPSS directory because SPSS/PC must be run from a directory other than \SPSS.

If you do not have Kermit installed on the hard disk, then insert the Kermit diskette. Issue the Kermit command on the microcomputer and you will be prompted with KERMIT-MS >. You are then in Kermit and can set the program parameters. The DO TSO command will set all the parameters except BAUD RATE which must be set to whatever rate is compatible with your modem. Or you may use the DO IBM command and set the parameters individually.

In the following examples, the computer's prompts are shown in upper case and your responses are shown in lower case. Italics are used to represent variable information.

```
C> kermit
KERMIT-MS > do tso
KERMIT-MS > set baud baudrate
KERMIT-MS > connect
```

or

```
C> kermit
KERMIT-MS> do ibm
KERMIT-MS> set baud baudrate
KERMIT-MS> set receive start-of-packet 03
KERMIT-MS> set send start-of-packet 03
KERMIT-MS> set key backspace
DEFINITION STRING: \10
KERMIT-MS> set parity even
KERMIT-MS> connect
```

Now you may issue the CONNECT command and log onto the IBM 3081D in the usual manner. Enter "tlogon" for the TSO interactive system. When you receive the READY prompt, enter "kermit". You will then receive the KERMIT-TSO> prompt.

```
READY
kermit
KERMIT-TSO> send portfile
```

Kermit will display the file logical record length (80) and the blocksize and will inform you that it will wait 20 seconds before it begins to send the file. To toggle back to the microcomputer, press CONTROL-] C.

```
ctrl-] c
KERMIT-MS> receive portfile
```

The screen will then display a set of status lines which report on the transfer process. When the transfer is complete, the word "COMPLETED" will appear on the RECEIVING status line.

Issue the CONNECT command to return to the mainframe so that you can exit KERMIT-TSO and logoff.

```
KERMIT-MS> connect
KERMIT-TSO> exit
READY
logoff
ctrl-] c
KERMIT-MS> exit
C>
```

Now you are back in MS-DOS on the microcomputer and you can run SPSS/PC by inserting your key diskette and issuing the SPSSPC command. Set your directory to the one in which your down-

loaded portable file is stored. This is necessary beause the IMPORT command will not accept a qualified file name, and, as mentioned above, SPSS/PC cannot be run from the \SPSS directory where it is stored.

For this example, assume that the portable file was downloaded into the \KERMIT directory on hard disk. A path is then set to access the \SPSS directory, and SPSS/PC is run from the \KERMIT directory. Note that the name of the downloaded portable file must be enclosed in single quotes.

```
C> cd \kermit
C> path \spss
C> spsspc
SPSSPC: import file='portfile'
```

The SPSS/PC program first returns the message <MODULE SWAP> in the upper right hand corner of the screen and a colon ":" below and to the left-hand side of the screen. Depress the carriage return to get back to the SPSSPC: prompt and status messages. The number of cases in the file will be displayed in the upper right hand corner of the screen. When the IMPORT program is completed, the portable data file and dictionary information produced by the EXPORT command on the IBM 3081D has become the SPSS/PC active file. To store the file on the microcomputer, use the SAVE command.

```
SPSSPC: save outfile='filename'
```

Read the SPSS/PC documentation regarding the EXPORT and IMPORT commands to review the differences between the mainframe and microcomputer versions of the SPSS files.

Uploading Files to the IBM 3081D

In order to upload an SPSS/PC file to the mainframe, use the EXPORT command. Remember to set your default directory as something other than \SPSS, and set a path to the \SPSS directory.

```
C> cd \kermit
C> path \spss
C> spsspc
SPSSPC: export outfile='portfile'
```

When the EXPORT procedure is complete, enter the Kermit program.

```
SPSSPC: exit
C> kermit
KERMIT-MS> do tso
KERMIT-MS> set baud baudrate
KERMIT-MS> connect
```

Logon to TSO on the IBM 3081D in the usual manner, and enter the TSO Kermit program.

```
READY
kermit
KERMIT-TSO> receive portfile
KERMIT-TSO> ctrl-] c
KERMIT-MS> send portfile
```

The status lines will appear on the screen so that you can follow the transfer process. When the transfer is completed, the word "COMPLETED" will appear on the SENDING status line. After the file has been transferred, issue the CONNECT command to toggle back to the mainframe to log off.

```
KERMIT-MS> connect
KERMIT-TSO> exit
READY
logoff
ctrl-] c
KERMIT-MS> exit
C>
```

Now you can turn off your microcomputer and hang up the telephone to break your connection. In order to use the portable file you have just uploaded, dial up the connect number for the mainframe and logon to Superwylbur. You have to run a batch job to IMPORT the portable file. This will translate the file into an SPSS-X system file on the IBM. The following example imports the portable file and saves it as a system file.

```
//jobname JOB logonid,'pgmr name',REGION = 512K,
//  MSGCLASS = X,TIME = (,20)
/*JOBPARM ROOM = delivery
//  EXEC SPSSX
//portable DD DSN = logonid.portfile,UNIT = SYSDA,
//  DISP = SHR
//sysfile DD DSN = logonid.system.file,UNIT = SYSDA,
//  DISP = (NEW,CATLG),SPACE = (TRK,(10,5),RLSE)
FILE HANDLE portable
IMPORT TYPE = COMM/ FILE = portable
FILE HANDLE sysfile
SAVE OUTFILE = sysfile
```

Macintosh User Group

The University of Chicago Macintosh User Group meets on the third Tuesday of every month. The summer meetings will be on the following dates:

> June 18th
> July 16th
> August 20th
> September 17th

The group has talks, demonstrations of software and hardware products, a Public Domain Software Library, and the opportunity to interact with other Macintosh users. Anyone interested in the Macintosh is welcome to join the group.

For further information contact,

> Janice M. Gyure
> Public Domain Software Librarian
> Eckhart 208A
> 962-7850

Microcomputer User Group News

In order to have news from your microcomputer group announced in the logon messages of our mainframe computers, send the text of your message to Cathy Kosto at 5737 S. University. You may also send a DEC mail message to Staff.Cathy.

New In The Demonstration and Development Lab

The following new hardware and software has been added to the Demonstration and Development Lab, 5737 S. University Avenue. To make an appointment to see any of the hardware or software in the Lab, call 962-7151.

Since the *Newsletter* is now published quarterly, we recommend using the MICLAB program on either DEC-20 to obtain up-to-date information about hardware and software in the Lab. Using the "new" option, you may limit the display to hardware and software acquired within the last month or week.

New hardware systems include:

- **AT&T 6300 Personal Computer** with two 360K floppy disk drives, 256K RAM, a monochrome graphics monitor, and AT&T MS-DOS version 2.11. The 6300 runs most IBM software.

- **Hewlett Packard 150 Model 2 Personal Computer** with new larger 12" non-touch screen. The HP 150 Model 2 has additional slots for serial cards, parallel cards, added memory, controller boards for instrument control, etc., and now has Intel 8087 math coprocessor capability.

- **Corvus 5 MB hard disk** for the Macintosh

The following software for the Macintosh has been added:

- **JetStart by Softstyle** - Macintosh print driver for the Hewlett Packard Thinkjet Printer

- **LaserStart by Softstyle** - Macintosh print driver for the Hewlett Packard Laserjet Printer

- **Switcher Version 2.0** (512K Macintosh only - Beta test) Allows for four concurrent applications, letting the user move between applications almost instantaneously. It also greatly facilitates cutting and pasting between applications. This program is not yet available for retail purchase, and cannot be copied. It is only available for demonstrations.

- **Smooth Talker by First Byte** - Software-only speech synthesizer with speed, pitch, volume, tone, and voice variables, a dictionary function, and stress, pitch, and inflection rules based upon sentence structure and punctuation.

- **PortaAPL from Portable Software Inc.** (512K required)

- **ExperLogo by XperTelligence Inc.** - LOGO for the Macintosh

For the **IBM XT**, the **SamnaWord** printer drivers are now available in the Lab.

Macintosh Introductory Class Scheduled

A free, non-credit seminar on the Apple Macintosh personal computer will be held on Tuesday, July 2, 1985 in Harper 406, from 1 p.m. to 4 p.m. Therese Nash, the education consultant with Apple Computer assigned to the University of Chicago, will be conducting the seminar. Topics to be covered in this seminar include:

1.   An introduction to the Macintosh working environment, including the desktop, Finder, icons, and the mouse.

2.   Demonstrations and information on how to use some Mac software, including MacWrite (the new disk-based version), MacPaint (the new, upgraded version), Switcher (a utility program that allows four programs to be resident in a 512K Mac's memory at a time), MacTerminal, and Lotus's Jazz integrated program.

3.   Questions and answers about the Mac and its use in academic and administrative applications.

If the attendance at this seminar is encouraging, then further free, non-credit seminars from Apple will be scheduled. If you're a new Macintosh owner, or someone considering a Mac, come to the seminar on July 2.
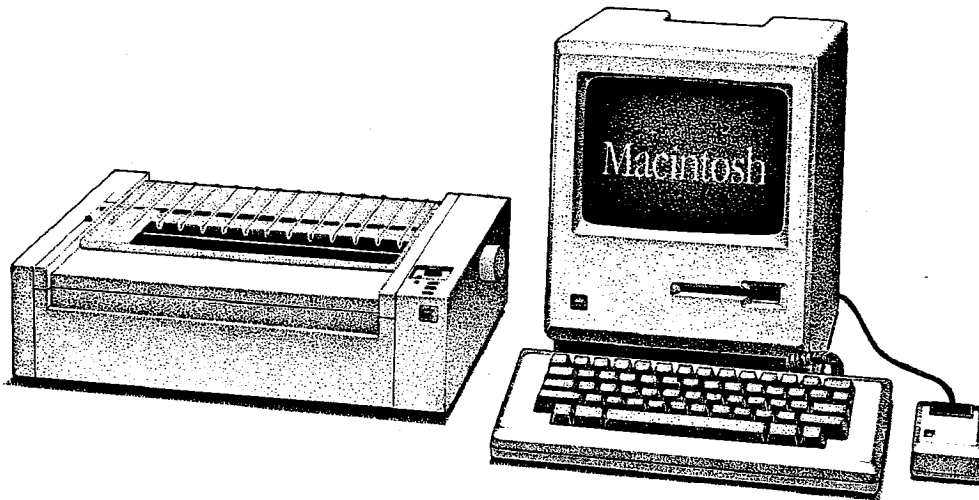
DEPARTMENTS

People

Promotions within the Center:

Linda Tuttle of Administrative Information Services has been promoted from Jr. Programmer/Analyst II to Programmer/Analyst. **Vincent Scamurra** has transferred from Production Coordinator in Operating Services to Jr. Systems Programmer I in Facilities and Hardware Planning. **Cosette Bardawil** has been promoted from Bookkeeping/Accounting Clerk II to Senior Purchasing/Invoice Clerk II.

Samuel Rebelsky has joined the Instruction and Documentation Services group as a Computer Cluster Assistant at Usite.

People who have left the Center:

Kimberly Huseman, Account Representative in Operating Services, has transferred to the Medical Center Information Systems.

Also in Operating Services, **Gary Stocks**, Computer Operator, and **Ron Logan**, Production Coordinator, have left the Center.

Bryan Pendleton, Senior Programmer/Analyst, and **Julie Dykstra**, Documentation Librarian, have both left the Library Systems group.

Margaret Cochran, Senior Purchasing/Invoice Clerk II in Business Services, has retired, and **Es-**ther Stirrup, Administrative Assistant III in Business Services, has resigned.

Harry Waldvogel, Senior Programmer/Analyst in Administrative Information Services, has also left the Center.

Documentation

New Documentation Available

04/23/85 **4374** Accessing the Bitnet Network
Explains how to use the Bitnet network to send or receive long-distance electronic mail on Computation Center computers. List of Bitnet Nodes.

04/22/85 **R226** TOPS-20 Users Guide (V. 6.0)
This document introduces users to the TOPS-20 operating system. It describes how to use the system, obtain system information, create files, modify files, and run programs.

04/22/85 **R232** TOPS-20 Monitor Calls Ref. (V. 6.1)
This manual describes all the monitor calls that are available in the TOPS-20 operating system. For easy reference, the monitor call descriptions are arranged alphabetically and presented concisely.

04/22/85 **R230** TOPS-20 User Utilities (V. 6.0)
This manual describes utility programs available to both privileged

and nonprivileged users of the TOPS-20 operating system.

04/22/85 **R228** TOPS-20 LINK Reference (V. 6.0)
This document describes LINK-20, the linking loader for TOPS-20.

04/22/85 **R231** TOPS-20 Monitor Calls U. G. (V. 6.0)
This manual describes the use of TOPS-20 monitor calls which provide user programs with system services such as input/output, process control, file handling, and device control.

04/22/85 **R227** TOPS-20 Commands Reference (V. 6.0)
This manual describes all operating system commands available to the nonprivileged user of TOPS-20. For easy reference, the command descriptions are arranged alphabetically.

04/03/85 **4301** Center related documents
Reflects all changes and additions since 1/85.

04/03/85 **4373** New Version of Treatise
This memo details the features of the new version of Treatise which is now available.

04/01/85 **R114** Magnetic Tape Usage
1. Correct procedure for mounting labelled DEC tapes is given.
2. No-write ring information is shown.
3. Restrictions on using VOL = SER = SCRTCH are described.

03/28/85 **4222** 1960, 70 & 80 CENSUS TAPES
All current census holdings have been added. This includes all PUMS-A5, STF-2A, STF-3A, STF-3B, STF-3C, STF-4A.

03/08/85 **4369** Interactive Graphics on MVS
Gives an overview of Cuechart, Tell-A-Graf, and the Data Connection on TSO. The Report Connection, File Connection, and Decision Support Connection facilities are described, and examples of their use are given.

03/01/85 **4371** Social Science Data Resources
Provides information on specific data resources available at the University of Chicago and how to access them. Also guides users in locating data held by archives or other sources outside of the University.

02/26/85 **4246** Guide to Software
Reflects the addition of two new MVS text processors, one new DEC text processor, and the DEC LISTOFF program.

02/26/85 **4225** IMSL
Reflects change in access policy to IMSL source.

02/26/85 **2045** IMSL on the DEC
Reflects change in access policy to IMSL source.

02/20/85 **4276** SAS
Information was added on: (1) How to avoid possible problems with ACF2 when using datasets stored at project level or under another logonid. (2) How to use World Map datasets.

02/19/85 **4372** Demo Lab Guidelines
This memo gives the guidelines for use of the Computation Center Demonstration and Development Lab. It includes the purpose of the Lab, services provided in the Lab, and procedures for scheduling time in the Lab for demos or equipment use.

02/15/85 **R108B** ICPSR U of C Data Collections
This version includes all new data collections since the last publication date of 11/83.

Recently Updated Documentation

New in the MVS Notice File

05/15/85 **SPSS21** New Release of SPSSX Installed

05/13/85 **SLAM1** Version 2.4 of SLAM II

05/13/85 **NEWS11** Pre-MacHigh and MacHigh School - Soon

04/29/85 **GRAF2** Tell-a-graf, Cuechart, & Data Connection Available on TSO

04/26/85 **TRT8** Problems with .SP in Treatise

04/22/85 **TRT7** Test Version of Treatise to Become Production

04/22/85 **NEWS10** Half line & line & one half spacing in WS97

04/19/85 **IMSL1** Version 9.2 of IMSL is available on MVS & DEC

04/15/85 **SPSS20** SPSS 9.1 Not To Be Removed Until End of Spring Quarter

04/03/85 **DOC1** New TOPS-20 Version 6.0 Manuals in DOCLIST

03/29/85 **COB3** COBOL 2.4 Available for Testing

03/28/85 **TRT6** New Version of Treatise in Test

03/22/85 **TEXT2** Changes in MUSE97

03/20/85 **TAPE13** Operating services no longer copies some mag tapes

03/05/85 **SPSS19** New Procedure TOSPSS Converts SAS Datasets

03/05/85 **SAS12** New SAS Procedure TOSPSS for Converting Datasets

02/18/85 **STAT7** LISREL Version 6.6 to be in Production

New in the DEC Notice File

04/22/85 **TRT3** Test Version of Treatise Becomes Production

04/22/85 **NEWS16** Half line & line & one half spacing in WS97

04/19/85 **IMSL1** Version 9.2 of IMSL is available on MVS & DEC

04/03/85 **DOC9** New TOPS-20 Version 6.0 Manuals in DOCLIST

03/28/85 **TRT2** New Version of Treatise in Test

03/22/85 **MUSE10** Changes in MUSE97

03/20/85 **TAPE5** Operating services no longer copies some tapes

03/18/85 **IDA1** New version of IDA in test

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the IBM 3081D, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of Superwylbur and TSO sessions is also provided. Statistics for the current month, the preceeding month, and the current month in the prior year are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs for the current month. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the current month, the preceeding month, and the current month in the prior year.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the month in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

Since the *Newsletter* is now published quarterly, rather than monthly, the presentation of monthly statistics seems out of place. Therefore, only the statistics for April are presented in the following tables. The Computation Center is now reviewing the types of statistics that could be meaningfully presented and a suitable new format.

MVS Utilization in April 1985

Service Provided	IBM 3081/MVS April 1985	IBM 3081/MVS March 1985	IBM 3081/MVS April 1984
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	4:31	4:46	4:45
non-setup jobs	2:24	2:05	2:25
tape setup jobs	30:38	33:47	34:28
Total CPU-hours used	371 hrs 0 min	379 hrs 48 min	271 hrs 0 min
Superwylbur sessions	25,248	25,949	29,416
CPU hours	22 hrs 38 min	18 hrs 11 min	21 hrs 34 min
connect hours	18,402 hrs	19,367 hrs	21,250 hrs
average session	44 min	45 min	43 min
average CPU/session	3.23 sec	2.52 sec	2.38 sec
TSO sessions	3,130	3,079	3,741
CPU hours	4 hrs 2 min	3 hrs 34 min	5 hrs 11 min
connect hours	1171 hrs	1176 hrs	1305 hrs
average session	22 min	23 min	21 min
average CPU/session	4.64 sec	4.17 sec	5.00 sec
Jobs submitted	57,733	61,427	67,373
Steps executed	108,333	114,128	109,972

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs in April 1985

Program	Description	Percent	Count
UCFLBL20	FILEBOL	9.42	11804
WYLLIST	SUPERWYLBUR List Offline	9.36	11730
SASLPA	SAS	8.20	10281
SORT	SyncSort	4.46	5590
IBMDEC	IBM/DEC link utility	4.31	5400
IEBGENER	IBM file handling utility	3.90	4888
IEFBR14	IBM utility - null step	3.57	4480
IEWL	Linkage editor	3.17	3977
MARKYBOL	Systems utility	2.83	3550
SUCCESS	Operating Services utility	2.28	2861
FAIL	Operating Services utility	2.24	2807
SPSSX	SPSS Version X	2.10	2635
IDCAMS	VSAM utility for catalog operations	1.90	2380
PGM = *.DD	User defined routines	1.40	1751
IKFCBLOO	COBOL VS compiler	1.37	1723
COPY1BUF	Unknown program	1.21	1519
BATCH204	Model 204 run in batch	1.20	1508
COMPUSET	Xerox text composing program	1.10	1380
SCRIPTW	SCRIPT	1.10	1377
XRXINT	XEROX print formatter	0.98	1224

CHIP - DECsystem-2060 Utilization in April 1985

Account Period	April 1985		March 1985		April 1984	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	90.3	5692	100.1	6261	91.5	5825
EVENING	28.3	1006	35.1	1274	38.9	1124
OVERNIGHT	67.5	939	69.6	1283	47.8	1305
TOTAL	186.1	7637	204.8	8818	178.2	8254

Top Twenty Chip Programs in April 1985

Program	Description	Percent	Count
MM	Electronic mail manager	8.93	8086
OPR	Operator functions	8.28	7500
MUSE	Full screen editor	6.92	6271
EXEC	TOPS-20 command processor	6.71	6081
SYSDPY	Operator interface with job queues	5.16	4673
PTYCON	Pseudo-terminal controller	4.77	4320
WATCH	Generates these statistics	4.68	4235
SYSJOB	System job controller	4.67	4234
MMAILR	Network mail daemon	4.67	4234
BITNET	Off-campus electronic mail network	4.63	4195
IBMSPL	MVS link daemon	4.60	4165
SHRSRV	File transfer daemon	4.59	4160
WINDOW	Full screen PTYCON	4.55	4123
USAGE	Utility to collect program use data	4.28	3878
SENDER	Local mail daemon	2.16	1959
EMACS	Full screen editor	2.10	1899
1022	Database system	1.86	1688
SED	Full screen editor	1.81	1638
BATCON	Batch controller	1.68	1519
ROGUE	Game	1.55	1407

DALE - DECsystem-2060 Utilization in April 1985

Account Period	April 1985		March 1985		April 1984	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	58.7	4814	69.5	6282	93.6	8146
EVENING	21.8	1459	24.6	1824	40.4	3283
OVERNIGHT	49.1	1569	54.2	2159	50.9	2653
TOTAL	129.6	7842	148.3	10,265	184.9	14,082

Top Twenty Dale Programs in April 1985

Program	Description	Percent	Count
1022	Database system	15.74	14536
OPR	Operator functions	9.30	8594
SYSDPY	Operator interface with job queues	5.44	5023
MUSE	Full screen editor	4.96	4583
WATCH	Generates these statistics	4.60	4249
SYSJOB	System job controller	4.58	4233
MMAILR	Network mail daemon	4.58	4233
IBMSPL	MVS link daemon	4.57	4221
WINDOW	Full screen PTYCON	4.56	4210
SHRSRV	File transfer daemon	4.42	4087
USAGE	Utility to collect program use data	4.06	3750
EXEC	TOPS-20 command processor	3.92	3620
EMACS	Full-screen editor	3.57	3300
PTYCON	Pseudo-terminal controller	3.06	2827
MM	Electronic mail manager	2.73	2523
MINITB	Interactive statistical program	2.41	2222
BITNET	Off-campus electronic mail network	2.02	1867
SENDER	Local mail daemon	2.00	1849
DEMAND	Data management system	1.93	1785
SED	Full screen editor	1.79	1650

General Information

The Computation Center serves the academic and administrative computing needs of the University of Chicago. We operate an IBM 3081D under MVS, two DECsystem-2060s (called Chip and Dale) under TOPS-20, and a Pyramid 90x under UNIX.

Quick Reference Phone Directory

Center information: days	962-7615
Nights and weekends	962-7626

Account Information

PCA Accounts	Usite, Business Office	962-7158
Other new computer accounts and account changes		962-7158
User billing and records information		962-7159

Advice

Programming Problems	Program Advisor	962-7624
Questions about applications	Usite, Wieboldt 310	
Suggestions,Complaints		
Program Bugs		
Refunds		
Social Science Computing Advice	Pick Advisor	962-7892
	Pick 123	
Demo and Dev. Lab	5737 University	962-7151

Materials and Supplies

Tape-related services		962-7614
Computing Materials	Tape Librarians	962-7614
Sales of computer supplies	Tape Librarians	962-7614
Used Equipment	Deborah Gomben	962-7615

Microcomputers and Word Processing

Consultations with new and prospective users Office support services Advice on word processors, micros,terminals	Information Technologies and New Services	962-7174
Microcomputer Purchases	Micro Distribution Center	962-3452

Center Services

Requests for new software and data files		962-7166
Programmer/Analyst services		962-7166
Custom Print Services		962-6081
Production jobs that require special scheduling and handling	Expediting Group	962-7602
Dataset recovery from Center backup tapes		962-7621
Data entry services		962-7604
Terminal maintenance, communications problems		962-7663

Mailing Lists and Subscriptions

Center mailing lists		962-7159
Memoranda Subscriptions	Usite Business Office	962-7158
Newsletter subscriptions		962-7159

Courses and Seminars

Questions about Center courses and seminars	Educational Coordinator	962-7173
Registration for courses and seminars which require a fee	Usite Business Office	962-7158
Registration for courses and seminars which do not require a fee		962-7153
Classroom	Harper 406	962-6014

Terminal Clusters and Equipment

Terminal Clusters	Usite Wieboldt 310 Regenstein 201 Abbott 602A Pick 123 Crerar
Card Readers	Usite
Key Punches	Usite
Xerox 2700 Laser Printers	Usite, Pick

Documentation - On-line and Offline

	Offline	Online	
		MVS Superwylbur	Chip, Dale
Documentation	Terminal Clusters	pub doclist	doclist
	Usite Business Office		
	Regenstein Reserve		
	Harper Reserve		
	Bookstore		
Notice File		pub notice	notice

Dial-up Connections

MODEM	On Campus	Off Campus
All Systems 300 Baud	5-8880	753-0980
All Systems 1200 Baud	5-8890	753-0945
IBX DOB (all switches)		
300-1200-4800 baud	5-3600	
Telenet Network Address		
300 baud	31236A	
1200 baud	31236	

Gandalf Class Codes

System	Baud Rate			
	300	1200	4800	Telenet
MVS	mvs3	mvs12	mvs48	mvstn
CHIP	chip3	chip12	chip48	chiptn
DALE	dale3	dale12	dale48	daletn
PYRAMID	unix	unix	unix	

Bitnet mailing addresses

Computer	General address	Example
IBM 3081 (MVS)	logonid@UCHIMVS1	XASHALB@UCHIMVS1
DEC 2060 (CHIP or DALE)	username@UCHICAGO	STAFF.HAL@UCHICAGO
Pyramid 90x (SPHINX)	person-id%SPHINX@UCHICAGO	HALB%SPHINX@UCHICAGO

Computation Center Administration

Computation Center Director	
Carolyn D. Autrey-Hunley	962-7690
Assoc. Director, Operations and Technical Services	
John E. Iannantuoni	962-7616
Asst. Director, Instruction and Research Information Services	
Harold C. Bloom	962-7155
Asst. Director, Information Technologies and New Services	
George R. Bateman	962-7174
Asst. Director, Administrative Information Services	
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UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

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GENERAL NEWS

New Location for Computation Center

— Peter Hayward

Over the weekend of September 13, the Computation Center moved its machines and offices to its new headquarters at 1155 East 60th Street. This building is across the Midway from Rockefeller Chapel and previously housed the American Bar Association. In moving to 1155, the Center was able to consolidate operations previously scattered across campus in three different locations. This move did not affect the Microcomputer Distribution Center, currently at 1307 East 60th Street, the terminal clusters such as Usite, or the Library Computer Systems group located at Regenstein Library.

The new location houses all of the Center's computers and peripherals, an enlarged microcomputer demonstration and development laboratory, increased room for terminal and microcomputer repair, and an input/output facility open around the clock where one can pick up output, submit tapes or computer cards, and check on the status of jobs by means of a few stand-up computer terminals. As part of the move, the Usite Business Office was closed and operations consolidated in the main Business Office, which is also at 1155.

Planning for the move to 1155 began last winter and was done in such a way as to minimize the impact on the Center's users. To lessen the downtime required by the move, the Center obtained substitute or replacement equipment. MVS disk

drives, certain communications equipment, and an Amdahl 5860 computer were installed at 1155 in advance of the move. After the move, the 5860 replaced the IBM 3081D, providing the capability for meeting users' needs with minimal cost to the University. (See "The Amdahl 5860" in this *Newsletter*.)

This article was prepared in advance of the move, but, if all went according to schedule, the following took place:

Week of September 2. Amdahl 5860 and replacement MVS disk drives installed at 1155. Dale is moved to 1155. Dale's disks are available to users on Chip.

Friday, September 13, 5:00 p.m. Public access to the IBM 3081D, Sphinx and Chip ends. Backups begin for about 110 disk drives while offices are moved to 1155. The Center's Ethernet, Illinois Bell and IBX telecommunications lines are switched over to terminate at 1155. Certain communications equipment is moved to 1155.

Saturday, September 14, 11:00 a.m. Nearly all of the remaining computer equipment, including the Sphinx, various peripherals, the 9700 printers, and the 12,000 unit tape library is moved, along with any remaining offices. Vendors and Center personnel work around the clock to rewire, install, and test equipment, and to restore data to the disks.

Sunday, September 15. Continued restoration and testing of the equipment.

Monday, September 16 morning. Communications testing is done on the Amdahl 5860, Sphinx and Dale. Chip is moved to 1155. Dale is renamed as Chip, and vice versa. When the machines become available on Tuesday, users are able to use the same procedures and files as they did on Friday.

Tuesday, September 17, 8:00 a.m. Center opens for business with all equipment operational except Dale. Dale's disks are available on Chip.

Tuesday, September 24. Dale (old Chip) is operational.

While the schedule represents our best estimate of the time needed for the move, it is inevitable that things occur in advance or behind this schedule. The Winter *Newsletter* will carry a special feature on the trials and tribulations of our move.

After our equipment and personnel feel at home in 1155, we will have an open house for our users. Watch the system notices and the *Maroon* for the announcement.

A handy list showing the location of some Center services and groups, and listing commonly called phone numbers is included at the end of this *Newsletter*.

Computation Center Services Now at 1155 E. 60th Street

— *Hal Bloom*

Many Computation Center facilities which previously existed in widely separated buildings are now located on the third floor of the building at 1155 E. 60th Street. These facilities include:

Business Office (room 336) **962-7158**
The Business Office is open Monday through Friday, 8:30 a.m. to 4:30 p.m. This office handles the establishment of new accounts, changes to existing accounts, user billing and records information, and cash payment for services.

Data Entry (room 306) **962-7604**
The Data Entry group primarily serves large administrative customers, but other users who need data entered on the Center's computers can often be accommodated.

Microcomputer Development and Demonstration Lab (room 352) **962-7151**
The D and D lab contains a variety of microcomputers and associated software. (See "Microcomputer Demonstration and Development Lab" in this *Newsletter*.) The staff is able to demonstrate all of the equipment and many of the software packages. Users may arrange to try other software packages on their own. Use of the D & D Lab is by appointment only. The Lab is open Monday through Thursday, 9:00 a.m. to noon and 2:00 p.m to 5:00 p.m. The Laboratory is closed on Fridays. To make an appointment, phone 5-3971 or 962-7151.

Expediting Services (room 308) **962-7602**
The Expediting Services group provides job scheduling and expediting services for production systems. It also restores disk datasets from backup tapes (962-7621).

Output Pickup (room 393) **962-7626**
Output generated on the Center's computers and directed to the Operations Site open bins (OSBN) or hold bins (OSHD) may be picked-up on a 24-hour basis at the I/O window, now located at the 1155 building.

Tape Librarian (room 315) **962-7614**
The Tape Librarian is available Monday through Friday between 8:00 a.m. and 4:30 p.m. In addition to tape-related services (purchasing, renting, and cleaning), certain computing materials and supplies may be bought from the Tape Librarian.

Terminal and Microcomputer Repair (room 302) **962-7663**
Many of the terminals popular on campus can be serviced here. Additionally, maintenance is available for Macintosh computers, disk drives and printers.

The following services have not been moved:

- Microcomputer Distribution Center (still located at 1307 E. 60th St.)

- User Advice Desk (still located at Usite)

- Public terminal clusters (only a few "express" terminals are located at the 1155 building)

The location of user service areas is shown on the following floor map.

Map of User Service Groups at 1155 East 60th Street

Third Floor, 1155 E. 60th Street

Daytime Elevator   Elevators

1	347	Administrative Reception Area	6	393	I/O Window
2	352	Micro Development Lab	7	310	Account Representatives
3	336	Business Office	8	306	Data Entry
4	317-	Information Technologies	9	302	Micro/Terminal Repair
	331	and New Services	10	363-	Administrative
5	315	Tape Librarian		372	Information Systems
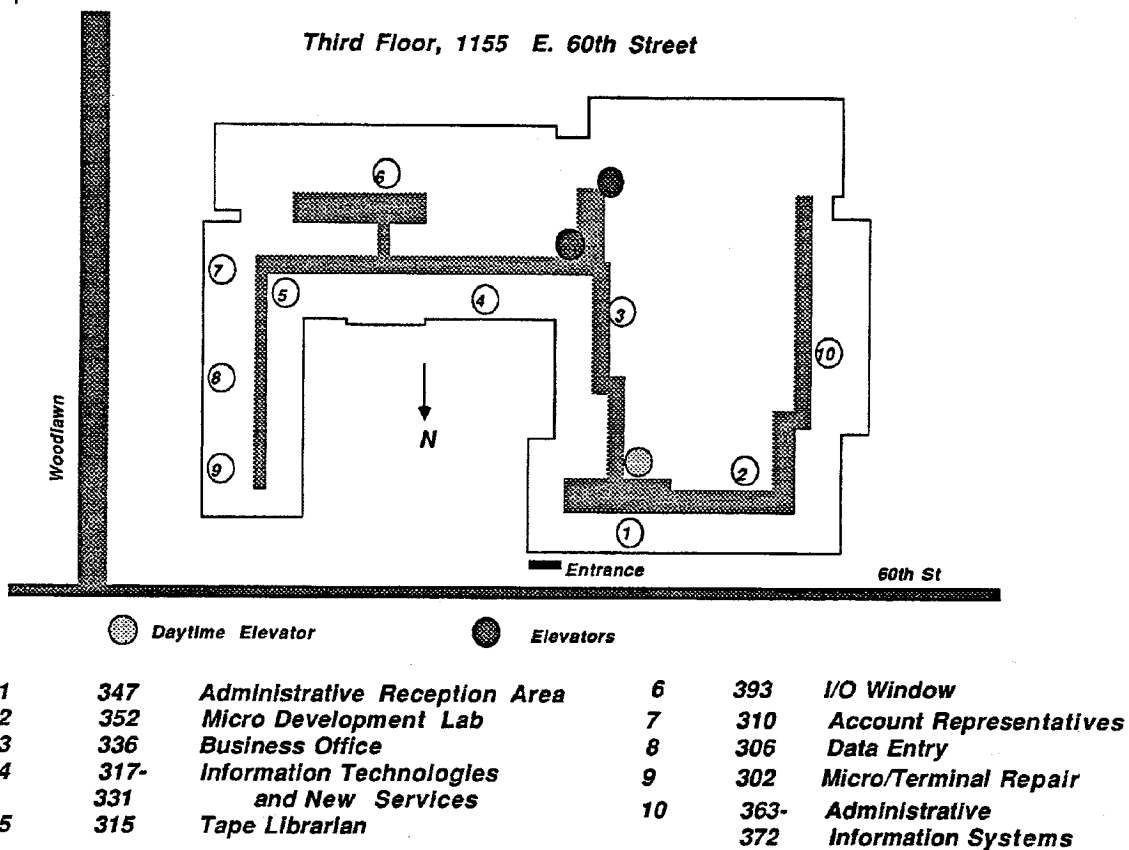
Academic Services, both programming and documentation, are located
on the 4th floor, west side of building, rooms 421-434.

What Computer Should You Use?

— Ernie Froemel

All of a sudden, somebody told you that you have to use a computer. It could have been your supervisor, your instructor, or your advisor. It sounded simple at the time, but then you saw this *Newsletter* and read about DEC, and Amdahl, and Pyramid, and microcomputers, and you heard about various departmental computers. Which one is best for you?

In many cases, the choice is made for you. The instructor has set up classroom accounts on the DEC-2060; your supervisor has all the department's data on the Amdahl 5860. In other cases, you need guidance in choosing the machine that will best meet your computing needs. This article is designed to provide part of that guidance, focusing primarily on Computation Center facilities.

Let's begin by looking at the different machines and their capabilities. Then, let's look at some typical computing needs and how they may be met.

The Amdahl 5860

The Amdahl 5860 is a big machine that comes from the tradition of batch processing. That is, it works best when you submit a complete set of commands as a job, and it can schedule the execution of that job in relation to all other jobs. Once you submit your job, you have passed control to the computer and don't get control again until the computer is finished or you cancel the job.

Interactive processing is available through TSO or, for some users, through Model 204. (See "Model 204: Database Management for Large Applications" in this *Newsletter*).

This computer is considered to be big because it has large amounts of memory, disk, and tape storage available and it can run several large batch jobs at one time. The Amdahl 5860 is used heavily by applications which require the maintenance of massive data files, extensive computations, or a large memory.

The current operating system for the Amdahl 5860 is MVS. You would ordinarily use either Superwylbur or TSO to create, submit, and examine jobs. Superwylbur is the easier of the two to learn and use, although ISPF under TSO is especially popular with programmers.

Since it is the biggest of the computers, the Amdahl 5860 is used by the Computation Center to account for computer use. Accounting for all central computer use is accumulated on the Amdahl, and it is also the machine on which project administrators make changes to existing accounts.

The Two DEC-2060s

The DEC-2060 is a medium-sized machine designed for interactive processing. That is, you issue a command, then the computer executes it and prompts for the next command. It's like having a conversation with the machine. The DEC-20 can converse with many people at the same time and make each feel as if he or she were the only one using the machine.

There are modest amounts of main storage and disk storage, and the two DECs share two tape drives. The DEC-20 was first acquired for instructional computing. It can handle moderately-sized mathematical and statistical analysis, database applications, and text processing. The machine is considered to be user-friendly. That is, it prompts you for commands, provides possible alternatives if you're not sure what to do next, and contains on-line files to help you learn about different programs. It is also fairly forgiving of beginner's mistakes.

The operating system for the DEC-20 is TOPS-20, through which you would access the machine. Once connected to the DEC-20, you could issue commands or call programs in order to get your work done.

There are two DEC-20s, one named Chip and the other called Dale. When you open a DEC-20 ac-

count, you have access to both of them.

The Pyramid 90X

Like the DEC-20, the Pyramid 90X is designed to be an interactive machine. However, it has less storage capacity than the DEC-20 and only one tape drive. The Pyramid may be used for academic and scientific purposes by members of the University community. Administrative or business uses of the Pyramid and use by external users are not allowed under terms of the operating system software license.

Our Pyramid has been named Sphinx, and its operating systems are two versions of Unix, a modern, flexible, and highly popular system. The two versions are the Berkeley 4.2 Unix kernel and the AT&T System V Unix. The capacity for running Unix was a major consideration in the acquisition of the Pyramid.

Microcomputers

Microcomputers are interactive computers that you operate directly. Sometimes they are called personal computers. There are many different kinds with diverse hardware configurations and software availability. If you want total control of and responsibility for your computing equipment, including installation, operation, and maintenance, you may consider buying your own personal computer. You then have the advantage of selecting the hardware and software that meets your specific computing needs, but you also have the responsibility for dealing with any hardware problems that might arise. You may also have to get along without some software that might have been available on a shared machine.

The Computation Center has negotiated discounts for microcomputer purchases with several manufacturers: Apple, Hewlett Packard, IBM, and Zenith. A list of equipment and discounts may be obtained from the Computation Center's receptionist at 1155 E. 60th Street.

Distributed Computing

A rather general guideline for selecting a computer is to choose the smallest and cheapest machine that can handle most of your specific computing needs. However, as your needs change, you may find that you occasionally need a larger machine. Because some campus computers are now interconnected via a network called Ethernet, you may shift your work to a bigger or smaller computer as your needs change. So, it is a good idea to have access to different-sized machines.

There is another advantage to having an account on different machines in the network. Certain sophisticated input/output equipment is connected to only one or another computer. For example, two Xerox 9700s are connected to the Amdahl 5860. The Xerox 9700 provides high quality printing, including multiple fonts like bold, italic, or proportional, typeset-like fonts. This *Newsletter* is printed on the Xerox 9700.

Mechanisms exist for sending text produced on the DECs, Pyramid, or even a microcomputer to the Xerox 9700.

Common Computer Applications

Thus far, the discussion has centered on the equipment. Now, we'll take a look at some typical computing needs. The comparisons will not include microcomputers because there are just too many alternative programs for the different machines. At this time, we do not support any particular microcomputer software, with the exception of the Kermit communications programs.

Statistical Analysis

One of the more common computing needs at the University of Chicago is the need to analyze empirical data using statistical techniques. For the most part, the choice of computer depends on the amount of data, the sophistication of the analysis, and the degree of exploration required.

Although precise boundaries can't be placed, the greater the number of cases and variables, the bigger the machine required to analyze the dataset. Multivariate analyses become particularly greedy for core storage as the number of variables increase.

Confirmatory analysis or hypothesis testing can be done either in batch or interactively. However, ex-

ploratory analysis is greatly facilitated in an interactive environment.

The availability of programs for statistical analysis should also be a consideration in your choice of computer. Programs like BMDP, SCSS, and SPSS-X are available on the DECs and the Amdahl. SAS is only on the Amdahl; Minitab is only on the DEC. A package called S Software is available on the Pyramid.

Text Processing

This is probably the second most popular computing need. Once again, the size and complexity of your need may dictate your choice of computer. Resumes, letters, short papers and reports could all be done easily on the DECs, Pyramid, or a micro. Books or dissertations would be better done on the Amdahl.

The complexity of automated formatting would also influence your choice. Multiple indices, tables of contents, footnotes, bibliographies, or other specialized formats are more easily handled by programs on the Amdahl at this time.

There really are no common text processing programs across the machines, although Emacs exists on both the DECs and the Pyramid. Full-screen editors are available on all machines. A full-screen editor allows you to see about twenty lines at a time on a terminal screen and to move the cursor anywhere on that screen in order to insert or modify the text.

The alternative to a full-screen editor is a line editor. You are allowed to enter or modify text on specified lines. There are line editors on the Amdahl, DECs, and Pyramid.

In addition to the editing programs, there are formatting programs. To use a formatter, you create text with control codes inserted. These control codes indicate how you want the following text formatted. There are codes that center, align, justify, or double-space text, and more powerful codes which indicate that a paragraph or footnote or long quotation follows. These control codes are interpreted by the formatting program which then produces your final formatted text.

Muse and Emacs are full screen editors on the DEC. Runoff is a text formatting program on the DEC. Nroff and Troff are formatters for the Pyramid, which has Emacs, Vi and Ed (a line editor) as its editors.

On the Amdahl, Superwylbur functions as a line editor and Script and Xset are the major formatters. Special programs which use Script are also available. GML provides special commands needed for papers, reports, and memos. Treatise provides the commands that produce a dissertation in the format required by the University of Chicago dissertation office.

Full screen editing on Superwylbur and TSO will be available through VTAM. See "Full Screen Editing for MVS" in this *Newsletter*.

Programming Languages

For those people who write their own programs, Fortran and Pascal are available on the DECs, the Amdahl, and the Pyramid. The DECs also have APL and Basic+2. The Amdahl has Cobol and PL/I. The C-Language exists on the Pyramid and the DECs.

Graphic Routines

Since a picture is worth a thousand words, many people like to display information using charts or graphs. A Calcomp 1051 four-color pen-plotter is available to DEC and Amdahl users. Pyramid users can run their plots on the Talaris laser printer. (See the article "Plotting on the Pyramid" in this *Newsletter*.) The Xerox 9700 printer will soon be available as a graphics device also. In addition, there are a number of terminals at Usite (Wieboldt 310) which will allow you to see your graph before you commit it to paper.

Again, there is different software on the different machines. Tell-a-graf, Cuechart, and the Data Connection can be run on the DEC. They can also be run on the Amdahl through TSO. SAS/GRAPH and Disspla exist only on the Amdahl, and the new SPSS menu-driven graphics system is available for testing on the Amdahl as well.

Further Information

As you can see, your choice of which computer to use depends on the mixture of your own computing needs. This article has only dealt with a few of the considerations. The Computation Center tries through several means to keep the University community aware of these many capabilities and how to use them.

This *Newsletter*, ordinarily published quarterly, is used to announce new products or revisions to old ones. It also lets you know about policies and procedures for the use of its facilities.

There is a system of memos and manuals which provides the details on how to use various products. All memos are available on-line and some manuals are also on-line. Racks of memos and manuals for your perusal are located at all the public terminal clusters. Documentation is also kept at the Regenstein library reserve and may be checked out overnight.

When you logon to a computer, messages are displayed which announce changes in hardware or software, problems, or new features. More lengthy announcements are placed in an on-line Notice file, until they can be added to the appropriate memo.

The Computation Center offers orientation tours and a small number of introductory seminars, as described elsewhere in this *Newsletter*. In addition, video-tapes on several topics are available for viewing at Usite.

Finally, a program advisor is on duty at Usite between 9:30 and noon, and again between 1:00 and 4:30, Monday through Friday. During the academic quarters, an advisor is also available during the evenings and on Saturday and Sunday. The advisor will answer questions about the Computation Center, supported programs, or general procedures. He or she will also help you locate errors in your computer jobs. However, the advisor is not meant to be a long-term consultant. If you require extensive help, you may have to make an appointment with another staff member and, in some cases, may have to pay for this service.

This article is long, but it has only skimmed the surface of the facilities of the Computation Center. Hopefully, the discussion about the different computers and programs has helped you decide which computer is best for your needs.

Opening a New Computer Account

— Peter Hayward

To use the Computation Center's computers, an individual needs a computer project-id and a person-id. Together, these two represent a unique seven-character combination (called a logon-id) that identifies to the computer(s) who is working on what, and keeps track of usage and billing. Procedures for obtaining a person-id or for opening various accounts follow. In nearly every case, the completed forms must be brought to the Business Office, room 336, 1155 East 60th Street, for processing. The office is open between 8:30 a.m. and 4:30 p.m., Monday through Friday. For those who have never used the Center's computers, a handout is available at Usite and at the Business Office which explains how to logon to each computer system.

Person-ids

As part of the registration process for Fall quarter, a person-id was assigned to each new student and all returning students who had not previously had one. The four-character person-id was printed on the student's validation card, and a sealed envelope with the password was placed in the individual student's registration packet. Anyone missing a password envelope should notify the Business Office at 962-7158.

Faculty members, staff, residents and interns who do not have a person-id may obtain one from the Business Office. Individuals who have forgotten their person-id or password should also visit the Business Office.

Project-ids

As noted, a three-character computer project-id (a funded account) is required to keep track of expenditures. A person-id may be enrolled in many projects. Being enrolled in a project means that the holder of the person-id has access to some or all of the computing funds allocated to that project. For example, a student might have several classroom accounts, a research account, and a personal computing account (PCA). Similarly, a single computer project may have many person-ids associated with it, as with a classroom account.

Personal Computing Accounts

Personal Computing Accounts (PCAs) are available to faculty, registered students and University Hospital interns and residents. These accounts may be used on any of the Center's computers, and are valid for a period of one year from the date they are opened. Accounts are opened at the Business Office upon presentation of a validated University identification card. PCA accounts are established as follows:

1. PCAs for students and University Hospital interns and residents will be funded at a level of $200 per year.

2. PCAs for faculty members are funded at $400 per year.

3. A PCA holder can pay $100 by cash or check for additional computing and will then receive an additional $200 of computing after the $100 has been spent. This option may be exercised only once during the year the PCA is valid. The $100 must be paid in total and cannot be billed to a University account.

    If the initial $100 is not spent, the holder may request a refund; however, there is no refund or carryover of unspent funds from the $200 allocation.

PCA accounts can be used for machine-related charges such as CPU time, connect time, or page printing. They may not, however, be used for non-machine charges such as the purchase of tapes or

custom programming.

If a PCA account runs out of funds, expires, or if a student holding the account is no longer registered at the University, then the data files belonging to that account will be copied to tape and the original files erased from disk. This is usually done two weeks after the account becomes invalid. For up to a year, datasets can be restored from tape upon payment of a $15 fee which cannot be charged to PCA or subsidy research funds. Restoration typically takes one working day and the service can be arranged at the Business Office.

Classroom Accounts

Funds are available to each academic department for use in instructional computing for scheduled courses. Faculty members should consult their departmental offices for specific procedures and forms.

Accounts Charged to University Funds, External Organizations, or Prepaid in Cash

Computing can be charged (1) to departmental funds, a grant or contract, (2) to a purchase order issued by an external organization such as another college or university, or (3) to a deposit account funded with cash from an individual. In the first case, the application to open the account must be signed by the individual authorized to allocate the funds in question. In the second and third cases, the person opening the account must visit the Business Office and provide information regarding the use of the account. Questions may be directed to 962-7158.

Easier Access To Central Computing Systems

— Don Goldhamer

Changes in Computation Center accounting procedures will make access to its computing systems easier for academic users. The first two steps in this series of changes will be in place by Fall quarter.

The first change is that every student who does not presently have a Computation Center person-id (PID) will be assigned a PID and a temporary password. These PIDs and passwords will be distributed to all students as part of the registration process. Students who already have a PID will not be affected by this new procedure.

Obtaining a Personal Computing Account (PCA) and enrolling a student in a classroom project will be greatly simplified by the prior assignment of person-ids. To obtain a new PCA account in the Fall quarter, a student needs merely to visit the Center's Business Office.

Secondly, the use of your accounts has been extended to all Center-supported computing systems. This has been the case with the Unix and MVS systems, but is new for the DEC-20s. (See "New DEC-20 Accounting Procedures" in this *Newsletter*.) Now one account and one dollar balance can apply to all machines.

New Classroom Account Procedures for Winter Quarter

In response to guidance from the Committee on Instructional Computing, the Center will be making further changes in the processing of instructional computing funds which will greatly simplify access to all Center computing facilities.

These benefits will also be extended to PCA (personal computing) funds. These changes will affect every member of the University who is entitled to subsidized funds: students, faculty, hospital interns and residents.

The heart of these changes is the creation, for each person, of a single account (logon-id) which will be used for all University subsidized computing. Computing for all courses in which a student is enrolled, for example, will be done from the same account. These accounts will carry over from quarter-to-quarter and perhaps from year-to-year.

Accounting Procedures Done Via Electronic Mail

— Peter Hayward

Project and fund administrators can now send electronic mail to the Business Office in order to change aspects of their computer accounts. For example, expiration dates and declining dollar limits can be changed, and people can be added or deleted from projects. (Accounts cannot be set up in this way as signatures and passwords are required.) Use MM on the DEC-20s to send electronic mail to Bus.Office specifying the change. The mail must be sent from the DEC account issued to the project or fund administrator. For further information, please call Allan Addleman, Manager of Business Services, 962-7161.
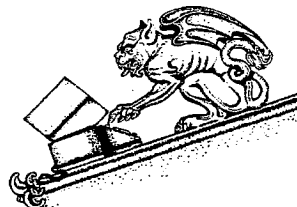
PCA Datasets of Unregistered Students Removed from System

— Peter Hayward

Personal Computing Accounts (PCA) are available to faculty, registered students and University Hospital interns and residents. (See "Opening a New Computer Account" in this *Newsletter*.) If a PCA account runs out of funds, expires, or if the student holding the account is no longer registered at the University, the datasets associated with that account are copied to tape and the originals then deleted from the disk. This is usually done two weeks after the account becomes invalid, and was done during the summer.

For up to a year, datasets can be restored from tape upon payment of a $15 fee which cannot be charged to PCA or subsidy research funds. Restoration typically takes one working day and the service can be arranged at the Business Office, room 336, 1155 East 60th Street. The Business Office is open between 8:30 a.m. and 4:30 p.m., Monday through Friday.

Printing on the Network

— Todd Nugent

Towards the end of the Fall quarter, a new method of using the Xerox 9700 printers will be available — network printing. The Computation Center's 9700s can be viewed as unique resources on campus. With a cost of around 2 cents per single-sided page, it is less expensive to print a page on the Xerox 9700 than to copy it on the least expensive campus copy machine. Therefore, we are working to make these low-cost, high volume printers available to other computers on the campus Ethernet.

The vehicle for this project is the Unix-based lpd software. The lpd program, as provided in BSD 4.2 Unix, is designed to provide common access to all printers connected to Unix machines on a common Ethernet. We have obtained a copy of this program for our DEC-20s from the University of Utah. Modification of the DEC-20 lpd program to use the DEC-MVS link will provide 9700 access to all DEC-20s and Unix machines on the campus-wide network.

We will be setting up several formats which utilize the more common 9700 JCL parameters: elite, pica, and twoup. On the Unix machines, these formats will be the name of the printer, specified with the -P flag. So, on Sphinx, the command

         % lpr *yourfile* -P elite

will print your file on the 9700 with a Pformat of elit2p and a margin of 10. The lpq command with the same -P option can be used to follow your print request as it is passed to the DEC-20 and then to the MVS system.

In the case of the Sphinx and the DEC-20s, where this service will be available first, the charges will be directly billed to your project/person-id used on that machine. When this service becomes available to other Unix machines on the Ethernet, it will be necessary to charge the print requests against a Sphinx or DEC-20 login-id by creating a .rhosts file in your home directory on either of those machines. The .rhosts file (see *man rlogin* on Sphinx for the format) is a list of remote Ethernet machine names and login-id pairs which are authorized to charge against your account without a password.

This service will be especially economical for such reference materials as source listings where the twoup format may be used. For example, four pages on the Sphinx Talaris printer costs forty cents, as compared to four page images on one page on the 9700, at a cost of about eight cents.

Initially, only "line-printer" type text will be available with no font or stress specification possible. However, depending on interest and Center resources, remote Troff and Xset support may be provided in

the future.

Watch system-wide mail on Sphinx and the DEC-20s for details.

Comparing Execution Times for Different Computers II

— Melinda Shore

In the Summer 1985 issue of this *Newsletter*, we included an article that described the results from a benchmark program run on several of the computers at Northwestern University. Since then we have had an opportunity to try the program on some of the computers on the University of Chicago campus.

The program is Alan Dyer's Cox regression program, originally written in Fortran IV and converted to Fortran 77 by Dan Garside, manager of the microcomputing laboratory at the Department of Preventive Medicine and Community Health, Northwestern Medical Schools. The program was designed to deal with large samples by using a temporary disk file during execution. It thus combines extensive numerical computation with considerable disk-based binary I/O.

We used the same sample data that was used by Northwestern. That data was chosen from the Western Electric case study, and consists of four variables on 1972 cases.

The program was tested on both Guts and Oddjob by Matt Crawford. Richard Congdon did the testing for Paideia. The tests on Chip, Sphinx, and the IBM 3081 were run by Melinda Shore.

The statistical results from all computers were identical to eight decimal places. Statistics for the microcomputers shown in the Summer 1985 *Newsletter* are included in the table and graph for easier comparisons.

The following table shows both real clock time and CPU time. Both times are in seconds.

Table Comparing Cox Regression Time for Eleven Computers

Machine Tested	Clock Time	CPU Time
IBM 3081:	414	7.8
Chip:	55	30.3
Sphinx:	89	54.0
Paideia:	116	84.9
Oddjob:	170	80.8
AT-copro:	244	-----
XT-copro:	501	-----
Guts:	630	470.0
XT:	2940	-----
PC:	3060	-----
PCjr:	6060	-----

The labels in the table and graph refer to the following machines:

AT-copro	IBM-AT with numeric co-processor and hard disk.
Chip:	A DEC-2060 running TOPS v6.1
Guts:	A Sun 120 workstation running Berkeley 4.2 Unix. Guts has 1M RAM and no disk, but accesses mass storage through an Ethernet.
IBM 3081:	An IBM 3081D running MVS.
Oddjob:	A VAX 11/780 running Berkeley 4.2 Unix. Oddjob has a floating point accelerator.
Paideia:	A Hewlett Packard 9000 running HP/UX 4.02 (an AT&T System III/System V variant). Paideia has 2M RAM.
PC:	IBM-PC without numeric co-processor and without hard disk.
PCjr:	IBM-PCjr with 128K memory and one disk drive.
Sphinx:	A Pyramid 90x running OSx, Pyramid's version of Unix. Sphinx has a floating point co-processor.

XT: IBM-XT without numeric co-
              processor, but with hard disk.

XT-copro   IBM-XT with numeric co-processor
              and with hard disk.

Cox Regression Timings on 9 Computers
Fortran 77 Program, 1972 Cases, 4 Variables

Bar chart. Y-axis: Execution Time in Seconds (0 to 3500). X-axis: Type of Computer.

Type of Computer	Execution Time in Seconds
Chip	55
Sphinx	89
Paideia	116
Oddjob	170
AT-copro	244
XT-copro	501
Guts	630
XT	2940
PC	3060
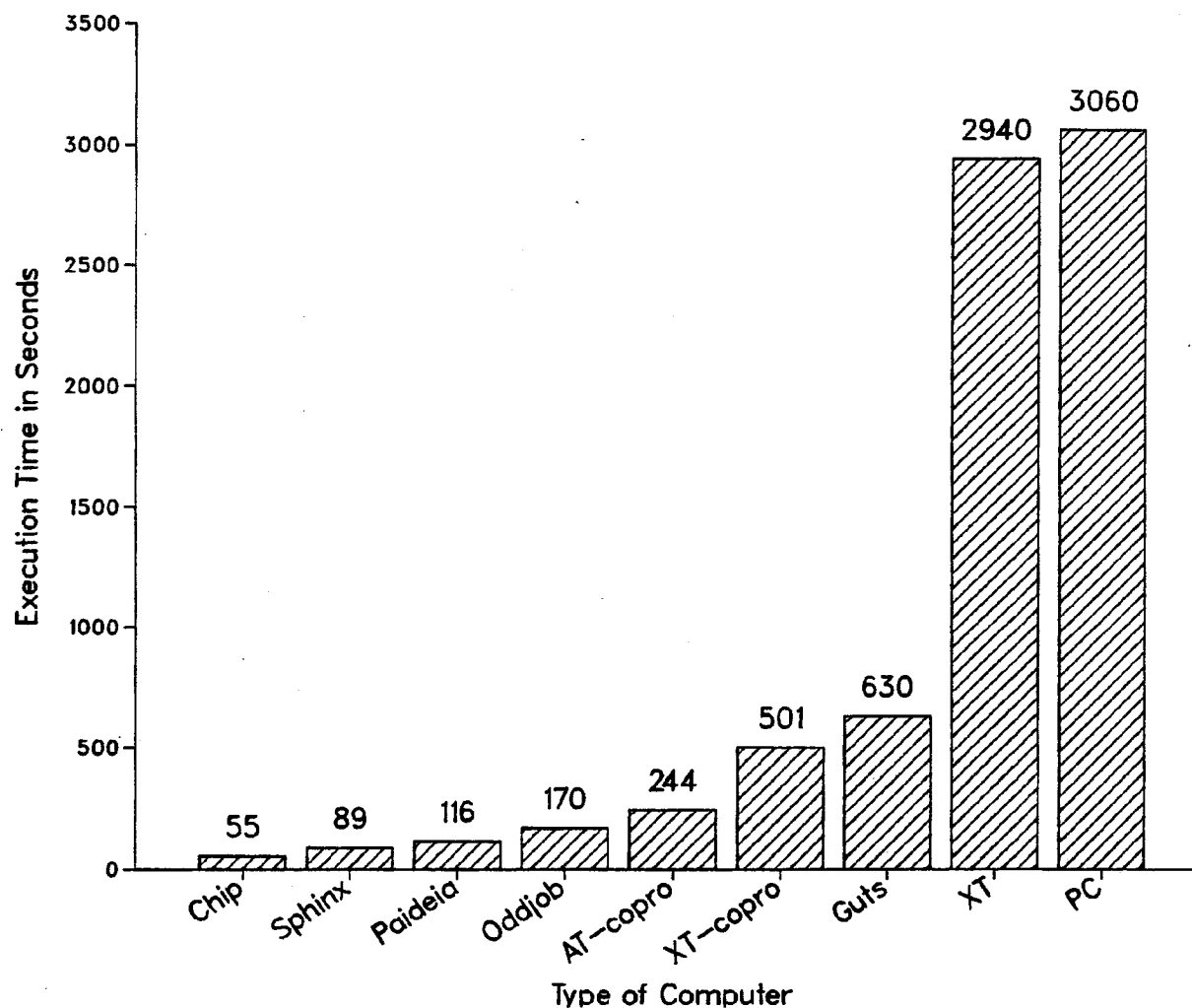
Computation Center Seminars for Fall 1985

— Ed Donner

The Computation Center is offering five short seminars which are open to the general University community. A schedule of the classes follows. These seminars are free of charge and are designed for the new computer user. No prior knowledge of computers is necessary. All seminars will meet in Harper 406.

If you cannot attend the seminars, or if you are interested in other topics, you can view any of our instructional video tapes free of charge at Usite. The topics covered in these videos include magnetic tapes, Superwylbur, the DEC-20s, Unix, Emacs, Muse, SED, and selected topics in microcomputing. Updated listings of available videos are posted by the self-study area at Usite, and are available from the attendant there. As with the live seminars, our video tapes are designed for the new user, so no prior knowledge of computers is necessary.

CC100 - COMPUTER CONCEPTS AND TERMINOLOGY (2 Parts)
Dates and Times: Tuesday and Thursday, October 8 & 10, 3:30 - 5:00
Prerequisites: None
Instructor: Don Crabb
An introduction to computers for those with no previous experience, this two-part seminar provides an overview of general computing concepts and terminology.

CC110 - COMPUTATION CENTER FACILITIES AND SOFTWARE
Dates and Times: Monday, October 14, 3:30 - 5:00
Thursday, October 17, 3:30 - 5:00
Prerequisites: None
Instructor: TBA

This seminar introduces the facilities and software available to Computation Center users. The focus of the seminar is two-fold: (1) the kinds of services and hardware the Computation Center provides and (2) the computer software the Center supports.

CC200 - INTRODUCTION TO SUPERWYLBUR
Date and Time: Wednesday, October 16, 3:30 - 5:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Ed Donner
A demonstration of the basic features of Superwylbur — how to create and edit text, save and scratch files, run jobs, and set up a PDS.

CC210 - INTRODUCTION TO THE DEC-20s (2 Parts)
Dates and Times: Monday and Wednesday, October 21 & 23, 3:30-5:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Ed Donner
This seminar introduces the DEC-20s at the University of Chicago. The hardware and software available to the DEC user is surveyed, and the basic commands for creating and manipulating files are demonstrated.

CC220 - INTRODUCTION TO THE PYRAMID/ UNIX SYSTEM (2 Parts)
Dates and Times: Tuesday and Thursday, October 29 and 31, 3:30 - 5:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Melinda Shore
This seminar emphasizes a practical introduction to the Pyramid/Unix system (called the Sphinx computer). It will stress how to access the system and explore its power and capabilities.

Computation Center Orientations

— Ed Donner

New users: don't let computer-phobia interfere with your education. Orientations to computing at the University of Chicago public clusters will be offered twice this quarter. Topics covered include how to set up the terminals, how to produce and locate output, and how to find answers to your questions. All orientations will begin by the Walt Whitman statue at Usite according to the following schedule:

Wednesday, October 9, 1:00-2:30
Friday, October 18, 11:00-12:30

One gains access to Usite through the west wing of Harper Library during library hours.

Public Computing Sites and Hours

— Ernie Froemel

The Computation Center provides access to computing at three locations which are open to any member of the University community. Other computing sites are provided by academic departments for the use of their faculty and students. For example, there is a Social Science cluster on the first floor of Pick Hall, and a Biological Sciences cluster on the sixth floor of Abbott.

For people who have used these facilities in the past, please note that there are changes in services and hours of operation. In particular, Usite is no longer open 24 hours per day, and Regenstein no longer has a printer.

Each of the three public sites contains computer terminals which may be connected to any of the

Computation Center computers. There are, however, differences among the sites with regard to types of terminals, documentation, assistance, printing, and hours of service. Each site is located within the confines of a University library, and is open during the hours that the particular library is open.

In the following section, each site is identified by name, address and phone number. The terminals are classified into three types. A CRT terminal consists of a keyboard and video screen. These may be used for most applications. A graphics terminal is also a CRT terminal, but in addition, it allows graphs or figures to be displayed on the screen. A hardcopy terminal does not have a screen -- it records on paper, much as a typewriter does.

Documentation refers to memos and manuals which are in open racks at the site. The days and times indicate the hours during the Fall Quarter when the site is open. These hours may change during the quarter, and are definitely different for the interim between quarters. We will post any changes at the sites and through system-wide messages on the computers.

Crerar: Located in the basement of the John Crerar Library, 5730 Ellis Ave.
Room 004   962-8923

Terminals, CRT:	6 Wyse 75
Graphics:	None
Hardcopy:	None
Documentation:	All memos and selected manuals.
Hours:	Mon. - Thu., 8:30 a.m. - 1:00 a.m.
	Fri. - Sat., 8:30 a.m. - 10:00 p.m.
	Sun., Noon - 1:00 a.m.

Regenstein: Located on the second floor of the Joseph Regenstein Library, 1100 E. 57th St.
Room 201   ⁓   962-7893

Terminals, CRT:	5 Teleray 3741
	1 Televideo 950
Graphics:	1 Televideo 950 with Graphics

Hardcopy:	5 DECWriter II
Documentation:	All memos and selected manuals.
Hours:	Mon. - Thu., 8:30 a.m. - 1:00 a.m.
	Fri. - Sat., 8:30 a.m. - 10:00 p.m.
	Sun., Noon - 1:00 a.m.

Usite: Located on the third floor of the William Rainey Harper Memorial Library, 1116 E. 59th St.
Room 201   962-7894

Terminals, CRT:	12 Wyse 75
	8 Televideo 950
	7 Teleray 3741
Graphics:	2 Hewlett-Packard 2648
	3 Televideo 950 with Graphics
Hardcopy:	6 DECWriter II
	1 Anderson Jacobson 830
Documentation:	All memos and manuals.
Hours:	Mon. - Thu., 8:30 a.m. - 11:30 p.m.
	Fri., 8:30 a.m. - 5:00 p.m.
	Sat., 10:00 a.m. - 5:00 p.m.
	Sun., Noon - 5:00 p.m.

Although not open as long as the other sites, Usite has the largest number of terminals and services. Printed output is delivered to Usite on a regular schedule. If you prefer, you may have your work printed directly at Usite, using either the Four-phase line printer or the Xerox 2700.

A cluster assistant is on duty when Usite is open to help you find your printout, show you how to use the terminals and printers, and direct you to documentation. Instructional video tapes may be checked out from the cluster assistant and viewed on the equipment at Usite.

In addition, a program advisor works at Usite to help you with problems that may arise with programs or systems supported by the Computation Center. For the Fall Quarter, the advisor's schedule is as follows:

Mon. - Thu.	9:30 a.m. - noon
	1:00 p.m. - 4:30 p.m.
	6:30 p.m. - 9:30 p.m.
Fri.	9:30 a.m. - noon
	1:00 p.m. - 4:30 p.m.
Sat.	10:00 a.m. - 1:00 p.m.
Sun.	1:00 p.m. - 4:00 p.m.

MVS

The Amdahl 5860

— *Ernie Froemel*

The IBM 3081D mainframe computer has been replaced by an Amdahl 5860. However, those of you using the MVS system may not have noticed the change. The programs, systems, and JCL that worked on the IBM also work on the Amdahl, without any modifications. In addition, CPU rates have been adjusted in an attempt to keep charges constant for the same work, whether run on the IBM or the Amdahl.

Some of the advantages to making this change follow:

- The Amdahl was installed at 1155 E. 60th Street before any of our other machines. That allowed us to test the MVS system before the move and to make a stable MVS system available sooner after the move.

- The change in machines significantly reduced expenses associated with the Computation Center's move to 1155 E. 60th St.

- The Amdahl has twenty to thirty percent more processing power than the IBM 3081D. Increasing processor demands by MVS users would have led to system upgrades in the near future, anyway.

- There are eight additional channels on the Amdahl. That will allow the Computation Center to better configure users' growing need for disk storage.

Because of the move, the Computation Center had been exploring alternatives for restoring a stable MVS environment with as little disruption as possible. The Amdahl represents a solution that met that requirement at no additional cost and will meet anticipated upgrade needs.

New 9700 Graphics Plotting Facility

— *Joel Mambretti*

During the Fall quarter, the Computation Center will install Epic, a facility for plotting computer-generated graphs on the Xerox 9700. Initially, the package will be able to handle graphs generated through Disspla, Tell-a-graf, and SAS/GRAPH. In each of these packages, a plot file will be created by specifying a device, such as X9700. The software for drawing graphs on the 9700 will also be directly accessible to Fortran or PL/1 programs by simply including the appropriate Xerox plot library in the job.

Later in the academic year, it will become possible, using Xset, to store graphs in a document component library and incorporate them with text in fully composed documents. Access to the 9700 through SPSS-X Graphics, when it is released, is also a possibility.

More information on the name of the library, the

driver names and the mechanism for spooling plot files to the 9700 will be forthcoming. Watch the logon messages for the latest developments.

New SPSS Graphics System Available for Test

— *Dorothy Raden*

The new SPSS graphics system will soon be available for test on the Amdahl 5860 through TSO. It is a highly flexible, menu-driven system allowing users to enter their data interactively through the keyboard. Data can be entered in spreadsheet format, by selecting variables from specified SPSS-X system files, or by dynamically specifying a fixed format data file.

Within the system, a user can create bar, pie, line, or difference line charts; simple or stacked pyramid charts; choropleth or prism maps, histograms, and scatter plots, as well as many other charts available through simple menu selection. In addition, it has a very easy-to-use procedure for combining multiple plots on a single page.

The new graphics system supports over thirty graphics devices, including the Calcomp 1051 plotter, Hewlett Packard and Tektronix terminals and plotters, the IBM-PC with the appropriate card and monitor, Gigi and Televideo terminals.

Graphs can be displayed by simply pressing the appropriate function keys to specify the various graphic elements.

The new SPSS graphics manual is located at the Usite cluster (R1N). Watch the Notice File for more information on using the system.

Math Printing on the Xerox 9700

— *Mike Wichura*

Formulator is a program which enables a user to prepare manuscripts containing mathematical material such as subscripts, superscripts, nested fractions, and multi-level equations for printing on the Xerox 9700. Printing is done in portrait mode, using a matched set of elite fonts made up of roman, italic, bold, script, and Greek alphabets, along with mathematical symbols and diacritic marks.

All the options of Superwylbur text formatting are available, except that right justification of lines is not supported. The prospective Formulator user needs to know Superwylbur text-editing and remote job entry.

A manual (R178) that describes and illustrates the various Formulator constructions and which details the steps needed to produce a finished document is available for inspection at Usite. To obtain your own copy, logon to Superwylbur and issue the following command:

call fr !sys2.formula.macros%printjob

[Formulator was developed by Mike Wichura who has generously made it available to Computation Center users. It is supported at the "C3" level. That is, the program is there for your use, but the Computation Center cannot provide assistance in fixing any problems that may arise. In addition, the advisors are only able to assist in the interpretation of the manual described above. — Ed.]

MVS Catalog Changes

— *Jim Lichtenstein*

The Center will begin to use an ICF (Integrated Catalog Facility) catalog structure in the near future. The change should be invisible to most users, however:

1. Users of generation data groups will have to use the IDCAMS utility to create a new generation data group. See IBM's *Access Methods Services*, SC26-3967 for further information.

   A new version of Memorandum 4352, "Installing a Generation Data Group under MVS," will be published as soon as a definite date for the ICF catalog is set.

2. The Superwylbur command:

   sho dsns like *dataset-name* on cat

   will work slightly differently. This may be an important consideration in how some Superwylbur macros function. See Notice File entry SWYL12 for examples.

3. The new catalog system will make it possible for anyone to create their own VSAM datasets. However, this aspect of the new catalog will **not** be provided on the starting day.

Please wait for the announcement that the catalog installation is complete before attempting to define VSAM clusters.

Full Screen Superwylbur

— *Gary Buchholz*

A new release of Superwylbur is tentatively scheduled for installation sometime this fall. The major enhancement to this new release is the availability of a full screen editor. The Superwylbur VTAM interface has also been acquired which will allow access to Superwylbur through our protocol converters. Minor enhancements include stacked retry command, extensions to Remote Job Entry, additional macro function and new mathematical functions derived from the standard Fortran mathematical subroutine library.

New ACF2 File Security System

— *Gary Buchholz*

A new release of ACF2, the MVS file security system, is also tentatively scheduled for installation this fall. This new release is a major rewrite that includes a number of internal technical and implementation enhancements. At the user level, full screen TSO logon has been added, along with extensions to ACF2 rules. The new TSO logon procedures, as well as the extended rule writing capability, will be detailed in a forthcoming Computation Center memo available a few weeks prior to the final installation date.

Version 1.6.1 of CICS Installed

— Emil Baciu

A new release of the IBM program product Customer Information Control System (CICS Version 1.6 Modification Level 1) has been installed on the Amdahl 5860 computer. Several online applications maintained by the Financial Systems group in the Comptroller's Office run under CICS. Applications currently running or under development are: Financial Accounting System, Accounts Payable/Purchase Order Entry System, Plant Department System, Real Estate Operations Budget System, Current Payroll Inquiry, and the new Payroll/Personnel System.

Release 5 of the Interactive Output Facility (IOF)

— Ron Thielen

Release 5 of IOF, the Interactive Output Facility, is ready to be installed. IOF is the TSO command for viewing output from batch jobs. This new release includes many functional enhancements for TSO users as well as improvements designed to aid systems programmers, operators, and production control personnel in managing the system. Some of the enhancements are:

- Many new criteria for selecting jobs to examine.

- Multiple datasets may be examined as though they were a single dataset.

- SYSIN may be browsed for output jobs.

- New information fields are displayed on the Job List and Job Summary panels.

- CLISTS may invoke IOF or be invoked from IOF for automated processing of job output.

IOF Release 5 is scheduled to be installed early this fall. The manual is available from DOCLIST as TSOIOF, manual R150. It may be examined at the Usite terminal cluster or the Regenstein reserve.

Model 204: Database Management for Large Applications

— David Trevvett

Model 204 is a large-scale data base management system (DBMS) which has been running on the Center's IBM/Amdahl mainframes for a number of years. Access to Model 204 has, until now, been restricted to certain administrative departments of the University, because of the special support it requires.

A product of Computer Corporation of America (CCA), it permits the user to quickly store, retrieve, update, and report on data, dynamically cross-referencing separate files as needed.

Model 204's logical structure is similar to that of the 1022 DBMS available on the DEC-20 computers; however, it is oriented towards larger-scale systems. It makes more efficient use of disk storage, provides more rapid retrieval, and can support a much larger number of simultaneous interactive users.

Its disadvantages include an awkward programming language, greater user effort to set up files, and higher operational costs for some applications.

Model 204 has its own programming language, known as User Language, which can be employed both for developing complex programs or entering simple *ad hoc* queries. In addition, Model 204 can be used in a "host language" mode, receiving and responding to commands and requests passed to it from a program written in Cobol, Fortran, PL/1, or Assembler.

For administrative programmers who already have access to Model 204, the Center and the Information Systems office of the College jointly created a 7-day course, "An Introduction to Model 204 for Programmers". This was taught in April 1985 and again in August 1985. It will probably be offered again in the Spring 1986.

For other Center customers, Model 204 is now available only in batch mode. Superwylbur or TSO can be used to create job streams referring to the Computation Center's catalogued procedures for Model 204. These can be submitted as ordinary batch jobs with output retrieved or printed in the normal way.

We are looking into the possibility of providing more general online access to Model 204. Once online access is provided, the full-screen features of Model 204 will be available through user-provided IBM 3270 terminals or through the IBM 7171 protocol converter described in the next article in this *Newsletter*.

Anyone with a particular need for such access should call Clark Wilson at 962-8871.

The publication of a new Computation Center Memorandum, "An Introduction to Using Model 204 at the University of Chicago," is expected this winter. This memo will contain samples of JCL streams to illustrate creation and initialization of Model 204 files, definition of fields in the files, storing and retrieving records, and generating reports.

Copies of the most important Model 204 manuals, the *User Language Manual* and the *File Manager's Technical Reference Manual*, should be available for perusal at Usite by next Spring.

Full Screen Editing for MVS

— Ron Thielen

Many of our users are familiar with full screen software on the DEC-20s and on Sphinx, our Unix system. Some of the more popular programs have been Emacs, SED, Muse, and Demand. Now full screen facilities are being made available to the general user community under MVS.

Full screen software has been available on IBM systems for many years. Unfortunately, it has always been restricted to IBM's 3270 terminal family which does not interface with ASCII oriented systems like those on the DECs or Pyramid. Furthermore, 3270s were historically dedicated to one online system. A 3270 user of Superwylbur, for example, could not also access TSO from the same terminal. Anyone who wished to use the DECs, Superwylbur, and TSO would have needed three different terminals.

Two changes have made it possible to offer full screen services under MVS. The first is the installation of an IBM software product known as VTAM (Virtual Telecommunications Access Method). The second is the installation of two IBM 7171 protocol converters which allow ASCII terminals to emulate 3270s.

VTAM is the base upon which IBM is building all current and future telecommunications network functions. It provides both flexibility and simplicity for a 3270 network. The simplicity comes from the fact that TSO, Superwylbur, and all of our administrative online systems will make use of a common terminal communications method. From the user's perspective, VTAM is flexible in that it allows the same 3270 terminal to access any online system running under MVS.

The 7171 protocol converters allow anyone with one of over twenty different terminal types to emulate a 3278 model 2. Not all terminals can be used with the 7171, and memory limitations restrict the number of terminal types which may be supported. However, we have attempted to support the more common terminals found on campus. The terminal types we currently support are:

Type Code	Terminal Model
ADM3A	Lear Siegler ADM3A
ADM31	Lear Siegler ADM31
C108	HDS Concept 108
DM1520	Datamedia 1520
DM1521	Datamedia 1521
DM3045	Datamedia 3045
HP262N	Hewlett Packard 125, 150, 2382, 2621, 2622, 2623, 2624, or 2626 in XON/XOFF mode
HP2648	Hewlett Packard 2647A or 2648 in ENQ/ACK mode
IBM3101	IBM 3101 or PC with 3101 emulation
MKERMIT	Macintosh Kermit with VT102 emulation
TR1060	Teleray 1060
TR1061	Teleray 1061
TR12	Teleray 12
TR4041	Teleray 4041
TVI912	Televideo 912
TVI920	Televideo 920
TVI950	Televideo 950 (normal output half intensity; hilights full intensity)
TVI950R	Televideo 950 (normal output full intensity; hilights reverse video)
TVI950X	Televideo 950 (with local modification to the standard IBM support)
TYPETERM	any dumb typewriter terminal (very inconvenient; minimal support)
VT100	DEC VT100 or Macintosh with Mac-Terminal
VT52	DEC VT52
WY50	Wyse 50
WY75	Wyse 75

Keyboards on 3270 type terminals differ significantly from the standard ASCII keyboard. 3270s have several additional keys which must be simulated when communicating through a 7171. Some of the more important of these are PF (program

function) keys, enter, clear, and the PA (program access) keys. These keys are simulated on the 7171 through the use of escape sequences and control characters. The mappings for these key sequences varies among the terminal types. They are documented as members of the catalogued dataset, SYS.ISPF.TERM7171. For example, the mapping for the Wyse 75 terminal is stored as WY75 in SYS.ISPF.TERM7171.

Access to a 7171 is through Gandalf class code "VTAM". Your terminal must be configured to use:

- 7-bit ASCII
- 1 stop bit
- 1 parity bit
- even parity
- full duplex

The baud rate should be set to one of the following: 300, 600, 1200, 2400, 4800, or 9600. If you are using an ITE with DOB1 to access the system, be sure to set the phone to the proper baud rate as well as the terminal. Once you receive the "class start" message, press carriage return. You will then receive a prompt to "ENTER TERMINAL TYPE:". Entering a question mark at this point will get you a list of the valid types. (Like the Type Codes shown above.) The prompts and responses would look like the following:

```
enter class VTAM
class start
ENTER TERMINAL TYPE: ?
VALID TYPES ARE:
C108
IBM3101

etc.

ENTER TERMINAL TYPE:
```

You then enter the terminal type corresponding to the terminal or PC which you are using. After entering the proper terminal type, you are presented with the VTAM Network Solicitor logon

screen, which is self-explanatory. Your terminal cursor will be placed where you are to enter information. Those lines are as follows:

SYSTEM   Enter the name of the system you wish to use, for example, TSO.

SIGNON INFO Enter your logon-id. After you press carriage return, you will be prompted for your password.

From this screen you may connect to any of the MVS online systems to which you would normally have access. When you logout from whichever system you were using, you are returned to this screen and may logon to a different system. Connecting to a system is accomplished by simply typing its name (TSO, Wylbur, etc.) next to the SYSTEM prompt.

Both TSO and Superwylbur have full screen facilities which may be used through VTAM and the 7171. Superwylbur's VTAM support will not be available until the latest release of Superwylbur is installed (See "Full Screen Superwylbur" in this *Newsletter*. TSO has several programs which operate in full screen mode, including ISPF and SAS version 5. Look for further information on these facilities in logon messages, the Notice file, and future *Newsletter* articles.

SAS Version 5 Is Now in Production

— *Jim Lichtenstein*

The current version of SAS is now Version 5.

The previous version of SAS (82.4) is being kept online as a backup system, but it is not likely that it will be supported by the SAS Institute (and hence not by us) through 1986; thus it is worthwhile to convert your SAS programs now.

Version 5 has new facilities and some syntax differences from older versions of the system. The graphics system is totally new. People with old GOUT datasets will have to convert them for use with the new system. Use PROC GCONVERT to do the job.

SAS has extensive help files and a new Display Manager which allows SPF-type editing and interactive SAS programmming under VTAM. Try it out!

If you have problems with Version 5 please keep your job output and let the advisor know.

Important Notes About SAS Version 5.08

1. You must use quote marks around titles and footnotes in Version 5.08. If you don't, you will get a warning as follows:

WARNING 620: OBSOLETE FORM OF STATEMENT OR TEXT82 OPTION INCORRECT.

2. SAS now puts out obscure error messages mentioning the XEXIT routine. This is a side effect of a previous error in the job. Look for PROTECTION EXCEPTION in particular in the JOB Log. In most cases, this problem is solvable by putting a larger REGION on your JOB card.

3. The N= option of the FILE statement defaults differently in Version 5.08 than in previous versions. It formerly defaulted to N=1. Now it defaults to the highest # pointer value in the DATA step. Check the new manuals to make sure you understand the difference. This affects people who do not use the N= option as well as those who do.

For more information on changes between SAS 82.4 and Version 5.08 see *Technical Report P-136: A Summary of Changes and Enhancements in Version 5 SAS Software* available at Usite, and at Regenstein Reserve.

TOPS-20

DEC-20 Status Report

— *Hal Bloom*

The Computation Center acquired its first DEC-20 system in 1977 to meet the general time-sharing needs on campus. Usage of the DEC-20 grew over the years to a point where one DEC could no longer handle the demand, and in the Spring of 1983, the Center acquired a second DEC-20.

Usage of these systems peaked in the Spring of 1984, and has been slowly declining since. One factor in this decline is the emergence of the microcomputer as a viable alternative for many tasks previously done in a time-sharing environment. At present, current peak capacity usage is too large to fit on one DEC-20, but considerable excess capacity remains on the combination of the two DECs.

As the use of micro- and minicomputers grows on campus, we expect the continued migration of applications from the DEC-20s. By the end of this academic year, one DEC should be able to handle the computing load adequately.

The Graduate School of Business, which also has two DEC-20s, the Computation Center, and the Provost's Office recognize the importance of the DEC-20s for both academic and administrative users, and acknowledge the investment that has been made in developing programs and systems for the DEC-20 environment. At the same time, it is clear

that Digital Equipment Corporation will not be producing a new generation of DEC-20s, and that at some point in the future it will no longer be cost-effective for the University to continue running these computers.

In discussing the future of the DEC-20s on campus, Robert Graves, Associate Provost for Computing and Information Systems, issued the following guidelines:

> It is now certain that there will be at least two and more likely three machines on campus until at least the end of calendar 1987. There will be at least 18 months notice of intentions to reduce the number of machines below two, and at least three years notice of intentions to abandon the machine altogether. No steps will be taken without reasonable lead time and ample discussion.

Approximately seventy different departments and administrative units are making use of the Computation Center's DEC-20s. About 60% of this usage is in support of text-editing, financial analysis, database, and mail, while the other 40% comprises a wide range of applications using over 200 different programs and packages. Text-editing, smaller financial applications, user-written programs, and some statistical analyses will move off the DEC as people acquire their own microcomputers during this academic year. However, database applications, larger modeling, and systems developed for the support of more than one user will continue to use the DEC.

Probably the set of applications most awkward to move are those which rely on System 1022. The staff of the Computation Center and the Graduate School of Business will announce meetings in the Fall Quarter to discuss replacing 1022. A prime area to be explored will be migrating from 1022 on the DEC-20 to 1032 on a VAX, but similar issues will be discussed if there is sufficient interest.

If you have particular questions, suggestions, or concerns regarding the plans for the Computation Center's DEC-20s, please contact Hal Bloom, As-

sistant Director for Instruction and Research, at 962-7155.

New DEC-20 Accounting Procedures

— Don Goldhamer

One dollar balance for all Computation Center facilities! That goal will be reached by the beginning of Fall quarter as Computation Center staff complete a revision of DEC-20 accounting procedures.

Under the new procedures, the declining dollar balance for all DEC-20 directories will be set each night to the amount remaining in the corresponding MVS logon-id account. This is exactly the same procedure as is presently used with the Pyramid computer.

This means that it will no longer be necessary to split your funds between DEC-20 computing and other computing: every DEC-20 directory will be billed to a specific MVS logon-id. Users will continue to be responsible for expense overruns, which will be detected with each night's accounting run.

Some effects of these changes are as follows:

> Users who print files from the DEC-20s via the MVS program will no longer have to keep separate funds in their MVS account, since all accounts are merged.

> The DEC-20 MONEY command will now show only amount-spent and amount-remaining as of the previous accounting run. (Detailed charges will, of course, be available via the job detail reporting procedures on MVS.)

> In the future, it will be possible to perform many system-related functions for your accounts on all Center supported computing

systems with one command; functions such as creating/killing accounts, locking/unlocking accounts, changing password or name, and archiving files. This also paves the way for greatly simplified access to Center supported facilities on other systems, such as electronic mail and economical printing.

New Versions of 1022 and Demand Available for Test

— Kay Sandacz

Version 116B of 1022 Database Management System is now available for test. The test version can be accessed by typing 'test 1022' at the beginning of your session. When you then enter 1022, you will be using the test version.

The major change in this version is that ADDITIVE attributes now function properly. Any user who needs to TRANSACT or load a descriptor file with ADDITIVE attributes must use the test version of 1022.

This version will be installed in production by early October.

New Demand-92

A new version of Demand is also available for test. This new version includes many new LOGIC-92 capabilities. LOGIC-92 is a programming language for manipulating variables entered through a Demand screen. Its features are documented in the Demand-92 manual, available through DOCLIST as DEMAND.

This version of Demand has not yet been adapted for University of Chicago terminal types. Instead,

you will be prompted for a video device. Enter a '?' to see the list of options that Demand will recognize.

To access this version, enter 'test demand' at the beginning of your session. This version of Demand will also be installed in production by early October.

PYRAMID/UNIX

Archiving of Pyramid Files

— Jim Lichtenstein

All files belonging to locked or expired projects or persons on the Pyramid system are moved to the Sphinx archive. The archive processor runs every second week. The moved files are kept online in /arc/u1/personid for two weeks and then moved to tape where they will be kept for one year. The *arclist* command is provided for users to discover which of their files are in the archive. The *arcrest* command allows users to request that files be restored from the tape archives. If your files have been archived within the last two weeks you can simply copy them back from the online archive. For example, user with person-id beta is archived on 8/21/85. On 8/27 she uses the following command to get her files back:

       cp -r /arc/u1/beta/*.

See the *man* pages for *arclist* and *arcrest* to get more information about these commands.

Note that files for expired classroom accounts must be restored to a different project-id.

Plotting On The Pyramid

— Melinda Shore

It is now possible to plot graphs on the Talaris laser printer using the qplot program. Qplot is a piece of software that interprets plot(5) files and translates them into the appropriate format for the Talaris.

There are several ways to generate plot files, but perhaps the easiest is using the S statistical package. S provides extensive graphics facilities and support for a number of graphics devices (for a list of devices, enter *help("devices")* inside of S). One device driver is "unixplot", which will send plots generated by S to a file called unixplot.out. This file can then be printed using qplot. For example:

```
% S                    (Invokes S from the shell)
...                    (S introductory information)
>unixplot              (Use the unixplot driver)
>usa                   (Draw a map of the U.S.)
>^D                    (Control-D exits S)
% qplot unixplot.out   (Plot the file)
```

Note that qplot does not behave like plot(1). Plot is also available and has a qms driver in addition to several others — see *man plot* for more information. Using plot, the above file could be plotted with the following command:

```
% plot -Tqms <unixplot.out | qprint
```

At this point there are no special charges for plotting on the Talaris. The program is not totally bug-free and should be viewed with suspicion. One known problem is that two blank pages are generated in addition to the plot page. If you discover other problems, please report them to the program advisor, 962-7624.

MICROCOMPUTING

Microcomputer Distribution Center

— *Steve Westfall*

The Microcomputer Distribution Center (MDC) is operated by the University of Chicago Computation Center. It serves the University by selling microcomputer equipment and related peripherals and supplies at substantial discounts to University departments and full-time faculty, students, and staff.

The Computation Center negotiates and maintains discount agreements with microcomputer manufacturers (currently Apple, Hewlett Packard, IBM, and Zenith) and with peripheral and software vendors. A current price list is available at the Computation Center and various other locations on campus such as Usite. It is also available online in NOTES:PRICES on the DEC-20s.

Apple Macintosh products and some software and peripherals are normally in stock, but because of insufficient MDC storage space, Hewlett Packard, IBM, and Zenith products are shipped directly from the manufacturer to the customer. Delivery is generally 3 to 6 weeks from the time the order is placed. The MDC hopes to acquire enough additional storage space soon to permit modest inventories of most major products.

There are several new discount programs which will be in effect for the Fall quarter. The statistics program, Minitab, is available for the IBM PC and compatibles (such as Zenith) for $80.00. This pro-

gram is the equivalent of Minitab which runs on the DEC-20s. All of Microsoft's products will be available through the MDC, and in the near future modems may also be available at very low prices. WordMarc, a word processing package for the IBM PC and compatibles, is also available. It is the microcomputer version of the Muse program on the DECs.

Several times a year, the MDC arranges for vendor representatives to demonstrate and discuss their products. Apple, Hewlett Packard, IBM, and Zenith all plan to visit campus during the Fall quarter. Watch the *Maroon* for dates.

Operating hours for the MDC are Monday through Friday, 10:00 a.m. to 4:00 p.m. The MDC currently is located in the basement of the Graduate Student Residence Hall, 1307 E. 60th Street, and must be entered through the 1st floor door on the southwest side of the building. Since this is some distance from the central campus, it is a good idea to call the MDC before visiting it. Personnel can advise you about products, prices, proper forms, etc. over the phone. The general MDC number is 962-6086. There is also a recorded message at 962-3452 which often has information on recent product announcements.

The MDC is one of three components of microcomputing support provided by the Computation Center to the University. In addition to the MDC, staff members are available to talk with users about their equipment needs (call 962-7174) or programming needs (call 962-7453). The Computation Center also operates the Microcomputer Demonstration and Development Lab. This facility contains a wide variety of microcomputer equipment and is used for demonstration and evaluation of products, and for professonal development of Center staff. Further information about the Lab is presented in the following article.

Microcomputer Demonstration and Development Lab

— Dorothy Raden

The Computation Center maintains a Microcomputer Demonstration and Development Lab in its new location — 1155 E. 60th Street, Room 352. The lab is open to all University of Chicago faculty, students, and staff. It has a wide variety of microcomputers, peripherals, and communication equipment. Units currently in the lab are: IBM PC & XT; Apple IIe, Macintosh, Macintosh-XL; Hewlett Packard 150, portable 110 & the Integral PC; Kaypro 10; Zenith 150. Various other units become available for short time periods. Appointments to see any of the hardware or software in the lab can be made by calling 5-3971 or 962-7151.

The purpose of the lab is to provide the University community with a non-pressured place to learn about micros and to evaluate specific hardware and software. The staff in the micro lab have programmed on many different systems and have evaluated a variety of workstations, software packages, and peripherals. However, the lab does not provide for in-depth consultation or make specific recommendations. Demos and use of the lab for evaluation purposes are free.

When equipment is available, University members may also use the lab for short work projects, such as file transfer, disk reformatting, or printing. The charge for such special projects is $10/hour.

The lab also has extra technical services available for a fee when staff are available. Some of the services are: on-site micro lab installation, file transfer, trouble shooting configuration problems, group training on micros, and basic consultation for an application (962-7453).

For users with DEC-20 accounts, information on hardware and software available in the lab can be obtained by logging onto the DEC-20 and entering MICLAB. Printed copies of this information may be obtained from the receptionist.

Lab hours are 9:00-12:00 and 2:00-5:00 Monday through Thursday. The laboratory is closed for maintenance on Friday.

U of C and the Apple University Consortium

— Stuart Schmukler

The University of Chicago is one of twenty-four universities which comprise the Apple University Consortium (AUC). The purpose of the Consortium is to promote computing in higher education by giving the member universities the opportunity to develop and share academic software for Apple microcomputers, including the Macintosh and the Apple II series. To aid in this software development, Consortium members each have one representative with full access to Apple's technical staff.

A seminar, "Introduction to Macintosh Development," will be presented October 11 from 9 to 12 in the classroom at 406 Harper. Andy Brownell from Apple will conduct the seminar. Also, videotapes on various facets of the AUC program are available at Usite. Included are: (1) an overview of the Macintosh development process (by an Apple technical representative); (2) the AUC program (by Apple); and (3) the AUC program at the U of C (by the Computation Center).

Since the University became a member of the Consortium, a number of development projects have been started. These include the development of the user interface for an automated telescope, a test bench and data collection program for spaceflight instruments, a series of programs for photomicrograph analysis, data collection programs for telephone and field surveys, and an enhancement to the Macintosh screen and keyboard enabling Greek classicists to type and edit Greek on the machine.

Special fonts for the Macintosh have been developed by a number of scholars. Some that have been created here are: Coptic, Gaelic, Cyrillic, Hebrew, Tamil, Devangari, Vine, Armenian, and Khmer (Cambodian). There are many other fonts available from other AUC schools.

There are now a number of development tools available on the Macintosh. Anyone in the university community who is interested in software development for Apple products should contact Stuart Schmukler (962-7630) or Bill Sterner (962-7172) for more information.

The AUC also enables U of C faculty, students, and staff (including Argonne National Labs and Fermi National Accelerator Lab) to purchase Apple hardware at discounted prices through the Microcomputer Distribution Center.

The members of the Consortium are:

> Boston College
> Brigham Young University
> Brown University
> Carnegie-Mellon University
> City University of New York
> Columbia University
> Cornell University
> Dartmouth College
> Drexel University
> Harvard University
> Northwestern University
> Princeton University
> Reed College
> Rice University
> Stanford University
> University of Chicago
> University of Michigan
> University of Notre Dame
> University of Pennsylvania
> University of Rochester
> University of Texas at Austin
> University of Utah
> University of Washington
> Yale University

Macintosh and Other Kermits

— Yvonne Behn

Kermit for the Macintosh is now available from the Business Office, 1155 E. 60th Street, for $15.00. Kermit is a communications program which allows files to be transferred between the Macintosh and the Computation Center mainframes (DEC-20s, MVS system, and Pyramid). When you purchase the Macintosh Kermit packet, you will receive the diskette containing MacKermit, a copy of Memo 6003 explaining its use, and a copy of the *Kermit User's Guide*. This release of Kermit works on the 128K, 512K, and XL Macintosh.

While the Macintosh Kermit is similar in function to most other Kermits, it operates in a slightly different way. In the Macintosh Kermit, you are always connected to the mainframe via a terminal emulator (VT102). The Macintosh Kermit commands are issued by means of pull-down menus that overlay your terminal session. The mouse provides access to the command mode, and the menus with their dialog boxes enable you to set the various operating parameters.

As with other Kermits, the Macintosh Kermit checks for errors during the transmission of data between machines, and will retransmit data in which there appears to be a difference between what was sent and what was received.

CP/M Kermit

A new Kermit for CP/M, operating on such microcomputers as the Kaypro II, 4, and 10, the Morrow Micro Decision 1, 2, and 3, Apple CP/M with Super Serial Card and CCS 7710 Card, and the Osborne, is also now available. Packets can be purchased at the Business Office for $15.00. The CP/M Kermit packet contains a diskette with the Kermit program, a copy of Memo 6000 explaining its use, and a copy of the *Kermit User's Guide*.

The following Kermit documentation is available on-line through DOCLIST:

R138 *Kermit User's Guide* (KermitUG)
R138A *Kermit Protocol Manual* (KermitPM)
R152 *Kermit-MS Reference Manual* (KermitMS)
R154 *Kermit FOR TSO* (KermitSO)

Memo 6000, "Kermit for CP/M"
Memo 6001, "Kermit for the IBM PC"
Memo 6002, "Kermit for the Apple II, II +, and IIe
under DOS 3.3"
Memo 6003, "The Macintosh Kermit"

Copies of the documentation are also available at the terminal clusters, and at Regenstein, Crerar, and Harper Reserves.

Setting End of Text for Kermit MS or CP/M

— *Yvonne Behn*

When transferring text files using Kermit-MS or CP/M Kermit, please note the following:

Kermit does not always recognize CTRL-Z as the end-of-file character, and so in order to avoid sending extraneous characters at the end of the text file, it is best to specifically set that parameter at the start.

In Kermit-MS, use the command

SET EOF CTRL-Z

The MSKERMIT.INI file may include this command.

In the new version of CP/M Kermit, distributed in August 1985, use the command

SET FILE-MODE ASCII

CP/M Kermit does default correctly by recognizing CTRL-Z, however, Kermit-MS does not.

Microcomputing Instructional Videos

— *Ed Donner*

The multitude of microcomputers that have found their way onto campus stands as testimony to the important role these machines play in academia today. Though they are increasingly common, microcomputers are still a mystery to many. If you would like to know more about microcomputing, you might be interested in some of the instructional videos that are available from the Usite attendant. All of the videos mentioned below may be viewed free of charge.

Introduction to Microcomputers
This series consists of three 90-minute seminars that introduce the basic terms and concepts of microcomputing.

Kermit on the IBM/PC
This video demonstrates the use of Kermit to emulate a terminal and to transfer files back and forth between an IBM/PC and our mainframe computers. Since Kermit for the IBM/PC is very similar to other versions of Kermit, this video would be of interest to anyone wishing to use Kermit for micro to/from mainframe communications.

Apple Development Seminar
The steps involved in developing software on the Apple Macintosh are discussed by an Apple representative and by a leading software developer.

Apple Computers at the University of Chicago
This video outlines some of the software development that has taken place on campus. It features interviews with a number of campus figures who have developed software to do such things as remotely operate a telescope, measure cell mass, do telometric testing, produce Greek fonts, and optimize business decisions.

Current Projects

A number of videos focusing on IBM-compatible software are due to be released soon. A series on MS/DOS, the operating system of many IBM-compatible machines, should prove useful for those who are new to that system. Samna, a word processing package, and Lotus 1-2-3, an integrated data analysis system, are both subjects of new video series.

A list of all current videos is posted by the independent study area at Usite.

New In The Demonstration and Development Lab

— Yvonne Behn

The following new products have been added to the Microcomputer Demonstration and Development Lab, 1155 E. 60th Street. To make an appointment to see any of the hardware or software in the Lab, call 5-3791 or 962-7151.

Since the *Newsletter* is now published quarterly, we recommend using the MICLAB program on either DEC-20 to obtain up-to-date information about hardware and software in the Lab. Using the "new" option, you may limit the display to hardware and software acquired within the last month or week.

New products include:

- **TalkShow/PC** by Interchart - Software graphics emulator allowing mainframe graphics to be captured and worked with on the IBM PC in a graphics terminal environment such as the Tektronix 4012/4014, 4027 or others.

- **Aura** by Softrend - An integrated software package for the IBM PC and XT including database, spreadsheet, word processing, and business graphics systems.

- **The FootMouse** by Versatron Corp. - A device for foot-controlled cursor movement on the IBM PC.

- **Statpro** by Wordsworth Professional Software - A statistics package for the IBM XT.

- **Mac Lion** by CSD - Database system for the Macintosh-XL.

- **Word Perfect,** Version 4.0 - Word processing package for the IBM XT.

- **TeleChess** - Software package for playing chess between two Apple II machines via telephone lines.

- **MacAdvantage UCSD Pascal** - Pascal compiler for the Macintosh.

- **TopView** - Window management shell for the IBM PC.

- **Personal Bibliographic Software** for the Macintosh.

- **Bibliofile** - Demo for the IBM PC.

In addition to these new products, new versions of previously available software packages have also been received. These include:

- **Kermit** - Version 4.04 - File transfer program for Apple IIe, Kaypro II, 4, 10, Morrow Micro Decision

- **Samna Word III** - Version 3.0

- **Macintosh-XL Workshop with Pascal** - Version 3.0

- **MacWorks** - Version 3.0

- **Switcher** - Version 4.0

- **Zenith MS-DOS** - Version 2.1 (Disk I,II,III)

- **ExperLogo** - Version 1.1 - Logo for the Macintosh

- **ExperLisp** - Version 1.05 - Lisp for the Macintosh

For a complete selection of software available in the lab, logon to the DEC-20 and type in MICLAB, or get a copy of the weekly listing from the receptionist at 1155 E. 60th St.

DEPARTMENTS

People

Promotions within the Center:

Martha Ash of Information Technologies and New Services has been promoted to Lead Staff Analyst. **Emil Baciu** of Operating Systems has been promoted to Lead Systems Programmer. **Beth Christy** of Operating Systems has been promoted to Systems Programmer. **Christophe de Grazia** of Operating Services has been promoted to Computer Operator. **Susan Kerr** of Library Systems has been promoted to Junior Programmer/Analyst II. **James Lichtenstein** of Applications Systems has been promoted to Lead Programmer/Analyst. **Steven Westfall** of Information Technologies and New Services has been promoted to Senior Staff Analyst.

People who have joined the Center:

Joseph Barnosky is a part-time Program Advisor for Instruction and Documentation Services.

People who have left the Center:

Drusilla Allin, Programmer/Analyst in Instruction and Documentation Services, has transferred to the Comptroller's Office. **Norman Caplan**, Programmer/Analyst in Applications Systems, has transferred to the Comptroller's Office. **Donald Crabb**, Educational Coordinator in Instruction and Documentation Services, has transferred to the Department of Computer Sciences. **Joan McGrane**, Junior Programmer/Analyst in Instruction and Documentation Services, has transferred to Human Resources Management. **Melissa Trevvett**, Senior Staff Analyst in Applications Systems, has transferred to the Library. **Linda Tuttle**, Programmer/-Analyst in Administrative Information Services, has transferred to the Development Office.

Helen Algar, Secretary in Administrative Information Services, has left the Center to begin a new career in the travel agency business. **Jerry Callen**, Senior Systems Programmer in Operating Systems, has relocated to Cambridge, Massachusetts where he will be working for Intermetrics. **Peter Chen**, Programmer/Analyst in Adminstrative Information Services, has joined the staff at Bell Laboratories. **Maxine Davis**, Stock Clerk in the Microcomputer Distribution Center, and **Peter Davis**, Lead Programmer/Analyst in Applications Systems, have moved to the Milwaukee area where Pete will be working for A. O. Smith Data Systems. **David Huber**, Administrative Coordinator of the Microcomputer Distribution Center, has left the Center. **Vivian Nix**, Junior Programmer/Analyst in Instruction and Documentation Services, is now working for the Uccell Corporation in downtown Chicago. **Subhash Sharma**, Project Manager in Administrative Information Services, has left to join the firm of Applied Information Development.

Documentation

New Documentation Available

08/27/85 **4301** Center related documents
Reflects all changes and additions since 3/28/85.

08/07/85 **4170** Rates: Internal Academic
Reflects changes in Rates and Services as of 8/1/85.

08/07/85 **4169** Rates: External Academic
Reflects changes in Rates and Ser-

vices as of 8/1/85.

08/07/85 **4168** Rates: Ext. Non-Academic
Reflects changes in Rates and Ser-
vices as of 8/1/85.

08/09/85 **6003** Macintosh Kermit
This memo describes the use of
Kermit in transferring files between
the Macintosh and the Computation
Center mainframes. It gives specific
examples of sessions using Kermit
on a Macintosh to upload and
download files to the DECs, TSO,
and the Pyramid. The memo also
addresses hardware requirements
for using Kermit and discusses the
use of Kermit for terminal emula-
tion.

07/31/85 **R138** Kermit User's Guide
This new edition of the manual in-
cludes descriptions of new releases
of many Kermit implementations.

07/30/85 **6000** Kermit for CP/M
This memo describes the use of
Kermit in transferring files between
CP/M microcomputers and the
Computation Center mainframes. It
gives specific examples of sessions
using Kermit on a Kaypro micro-
computer to upload and download
files to the DECs and TSO. The
memo also addresses hardware re-
quirements for using Kermit and
discusses the software and ad-
vanced Kermit features. A summary
of Kermit commands is given at the
end.

06/27/85 **4367** GenBank Data Bank
The new set of manuals, consisting
of the first seven files of the Gen-
Bank Data Bank tape, are de-
scribed individually. Information
about the additional 13 files of nu-
cleic acid sequences is also given.

06/27/85 **R2** Emacs Manual
This new version of the manual

corresponds to Emacs version 161.

06/21/85 **R150** TSO IOF User's Guide
Describes the new version of IOF.

06/21/85 **4153** Cataloged Procedures for
SPSS
Adds a section on the SAS proce-
dure TOSPSS which converts SAS
datasets to SPSSX "system" or
"portable" files which can then be
downloaded and used by SPSS/PC.

06/21/85 **4276** SAS
Adds a section on the SAS proce-
dure TOSPSS which converts SAS
datasets to SPSSX "system" or
"portable" files which can then be
downloaded and used by SPSS/PC.

06/13/85 **2058** WS97
The parameters which need to be
set when sending the WordStar file
to TSO were added. Also, a section
was added on variable vertical
spacing increments -- half-line
spacing, single spacing, one-
and-one- half line spacing, double
spacing.

06/07/85 **2059** Mailnet
Describes use of EDUCOM's inter-
university long distance mail net-
work, Mailnet. The memo contains
cost information and a list of cur-
rent Mailnet sites.

06/07/85 **4375** Macintosh/Sphinx File Trans-
fer
Explains how to upload files written
with MacWrite/MacPaint on the
Macintosh to the Sphinx where
they may be printed on the Talaris
printer.

06/07/85 **4331** Calcomp 1051 Plotter
Instructions were added on how to
cancel a plot request job.

04/23/85 **4374** Accessing the Bitnet Net-
work

Explains how to use the Bitnet network to send or receive long-distance electronic mail on Computation Center computers. List of Bitnet Nodes.

Recently Updated Documentation

07/26/85 **4335** Selecting Symbol Sets

05/28/85 **4373** New Version of Treatise

New in the MVS Notice File

08/16/85 **SAS17** SAS - Version 5.08

08/23/85 **NEWS19** Computation Center Relocation

08/06/85 **SAS16** Use of () in TABLES Statement is Necessary

08/05/85 **MICR12** Differences in Rice TSO Kermit vs Former TSO Kermit

08/02/85 **NEWS18** TEMP03 Reserved for Temporary Datasets Only

08/02/85 **MVS19** TEMP03 Reserved for Temporary Datasets Only

08/02/85 **SAS15** SAS 82.4 is still available as a backup system

07/16/85 **SAS13** SAS Version 5 in Test

07/10/85 **NEWS16** ICF Catalog Installation

07/03/85 **SWYL12** "On Cat" Works Differently Under ICF Catalog

07/03/85 **NEWS15** Problem with DEC/MVS Link to CHIP

06/25/85 **TRT10** No more automatic section numbers

06/20/85 **TSO5** New Version of TSO/IOF To Become Available

06/13/85 **NEWS13** The Dumper Utility

changed to Chip: field-test version

06/13/85 **MINI2** Minitab version 82.1 is available

05/29/85 **SPSS22** SPSSX Version 2.1 Now the Default

05/23/85 **TRT9** Using :ANUM. and :FNUM. with Font Selection

New in the DEC Notice File

08/23/85 **NEWS21** Computation Center Relocation

07/10/85 **10224** Version 116B of 1022 is now in test

06/25/85 **TRT5** No more automatic section numbers

06/13/85 **NEWS20** The Dumper Utility was changed

06/13/85 **MTB1** Minitab version 82.1 is available

05/23/85 **TRT4** Using :ANUM. and :FNUM. with Font Selection

05/17/85 **IDA2** New version of IDA now in production

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the IBM 3081D, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of Superwylbur and TSO sessions is also provided. Statistics for the past three months d are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization May - July 1985

Service Provided	IBM 3081/MVS May 1985	IBM 3081/MVS June 1985	IBM 3081/MVS July 1985
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	5:40	6:12	11:41
non-setup jobs	2:08	2:14	3:52
tape setup jobs	50:26	47:36	78:20
Total CPU-hours used	403 hrs 30 min	474 hrs 0 min	372 hrs 54 min
Superwylbur sessions	26,052	23,888	23,186
CPU hours	19 hrs 36 min	18 hrs 5 min	18 hrs 22 min
connect hours	19,215 hrs	17,579 hrs	17,540 hrs
average session	44 min	44 min	45 min
average CPU/session	2.71 sec	2.73 sec	2.85 sec
TSO sessions	2,726	2,528	2,736
CPU hours	4 hrs 12 min	5 hrs 13 min	4 hrs 24 min
connect hours	1071 hrs	956 hrs	1286 hrs
average session	24 min	22 min	28 min
average CPU/session	5.55 sec	7.43 sec	5.80 sec
Jobs submitted	63,155	56,477	57,626
Steps executed	113,185	107,105	110,879

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs May - July 1985

Program	Description	Percent	Count
UCFLBL20	FILEBOL	9.72	35593
WYLLIST	SUPERWYLBUR List Offline	9.52	34861
SASLPA	SAS	8.16	29903
SORT	SyncSort	5.08	18622
IBMDEC	IBM/DEC link utility	3.95	14474
IEFBR14	IBM utility - null step	3.60	13198
IEBGENER	IBM file handling utility	3.58	13108
IEWL	Linkage editor	2.76	10106
MARKYBOL	Systems utility	2.70	9886
SUCCESS	Operating Services utility	2.38	8726
FAIL	Operating Services utility	2.34	8590
IDCAMS	VSAM utility for catalog operations	2.20	8059
SPSSX	SPSS Version X	2.09	7651
BATCH204	Model 204 run in batch	1.42	5209
SCRIPTW	SCRIPT	1.26	4639
PGM = *.DD	User defined routines	1.23	4535
IKFCBLOO	COBOL VS compiler	1.17	4304
COMPUSET	Xerox text composing program	0.89	3291
IGIFORT	Fortran G compiler	0.83	3072
XRXINT	XEROX print formatter	0.81	2986

CHIP - DECsystem-2060 Utilization May - July 1985

Account Period	May 1985		June 1985		July 1985	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	88.8	5314	77.2	5106	85.3	4425
EVENING	29.7	1111	25.7	783	23.2	508
OVERNIGHT	64.9	1168	58.3	956	40.6	478
TOTAL	183.4	7593	161.2	6845	149.1	5411

Top Twenty Chip Programs May - July 1985

Program	Description	Percent	Count
OPR	Operator functions	7.98	19929
MM	Electronic mail manager	7.48	18683
MUSE	Full screen editor	6.01	15021
EXEC	TOPS-20 command processor	5.52	13803
SYSDPY	Operator interface with job queues	5.36	13384
PTYCON	Pseudo-terminal controller	5.25	13132
IBMSPL	MVS link daemon	5.19	12982
WATCH	Generates these statistics	5.19	12966
SYSJOB	System job controller	5.19	12965
MMAILR	Network mail daemon	5.18	12948
SHRSRV	File transfer daemon	5.12	12802
BITNET	Off-campus electronic mail network	5.12	12792
WINDOW	Full screen PTYCON	5.11	12775
USAGE	Utility to collect program use data	4.94	12345
1022	Database system	2.36	5906
EMACS	Full screen editor	2.33	5821
SENDER	Local mail daemon	1.98	4959
SED	Full screen editor	1.88	4718
BATCON	Batch controller	1.73	4320
DEMAND	Data management system	1.27	3177

DALE - DECsystem-2060 Utilization May - July 1985

Account Period	May 1985		June 1985		July 1985	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	75.4	5229	57.2	4263	49.7	3453
EVENING	23.1	1606	15.2	1063	10.7	606
OVERNIGHT	59.1	1693	33.8	1424	27.1	737
TOTAL	157.6	8528	106.2	6750	87.5	4796

Top Twenty Dale Programs May - July 1985

Program	Description	Percent	Count
1022	Database system	10.86	28190
OPR	Operator functions	9.21	23907
SYSDPY	Operator interface with job queues	5.78	15000
MUSE	Full screen editor	5.06	13156
SYSJOB	System job controller	5.02	13036
WATCH	Generates these statistics	5.02	13036
MMAILR	Network mail daemon	5.02	13028
IBMSPL	MVS link daemon	4.98	12946
WINDOW	Full screen PTYCON	4.97	12905
SHRSRV	File transfer daemon	4.85	12590
USAGE	Utility to collect program use data	4.84	12577
BITNET	Off-campus electronic mail network	4.80	12480
EXEC	TOPS-20 command processor	3.84	9974
EMACS	Full-screen editor	3.42	8877
PTYCON	Pseudo-terminal controller	3.41	8864
MMAILR	Network mail daemon	2.48	6450
DEMAND	Data management system	2.17	5650
MINITB	Interactive statistical program	1.93	5019
SENDER	Local mail daemon	1.81	4714
SED	Full screen editor	1.60	4160

General Information

Computation Center Administration

Director of the Computation Center   Carolyn D. Autrey-Hunley   962-7690

Associate Director
Operations and Technical Services   John E. Iannantuoni   962-7616

Assistant Directors
Instruction and Research Information Services   Harold C. Bloom   962-7155
Information Technologies and New Services   George R. Bateman   962-7174
Administrative Information Systems   David E. Trevvett   962-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	962-7151
Microcomputer Distribution Center	1307 E. 60th St.	962-3452
Multi-media Classroom	Harper 406	962-7153
Usite Terminal Cluster	Wieboldt 310	962-7894

Computer Communications Information

Phones

	300 baud	1200 baud	4800 baud
Modem calls, on campus	5-8880	5-8890	--------
Modem calls, off campus	753-0980	753-0945	--------
IBX-DOB calls	5-3600	5-3600	5-3600

Class codes

Computer	System	300 baud	1200 baud	4800 baud	telenet
Amdahl 5860	MVS	mvs3	mvs12	mvs48	mvstn
DEC-2060 Chip	TOPS-20	chip3	chip12	chip48	chiptn
DEC-2060 Dale	TOPS-20	dale3	dale12	dale48	daletn
Pyramid 90x	Unix	unix	unix	unix	-----

Bitnet mailing addresses

Computer	General address	Example
Amdahl 5860 (MVS)	logonid@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username%chip@uchicago	staff.hal%chip@uchicago
DEC-2060 (Dale)	username%dale@uchicago	staff.hal%dale@uchicago
Pyramid 90x (Sphinx)	person-id%sphinx@uchicago	halb%sphinx@uchicago

Telenet dial-in information   Nearest phone number   Network address
800-336-0437 most states   31236A (300 baud)
800-572-0408 Virginia   31236 (1200 baud)

Quick Reference Phone Directory

Information
General 962-7151
Machine status 962-7626

Accounts
Billing information & records 962-7158
Opening class accounts 962-7159
Opening PCA and regular accounts . . . 962-7158
Refunds 962-7624

Advice and Help
Applications software 962-7624
    Reporting problems
    Suggestions & complaints
Office support systems 962-7174
    Microcomputers
    Terminals
    Word processors
Social Science computing 962-7892
    ICPSR data codebooks
    SAS & SPSS-X consulting

Computer materials & supplies 962-7614

Custom services
Microcomputer technical services 962-7453
Printing 962-6081
Programming 962-7166

Data entry services 962-7604

Dataset recovery
PCA accounts 962-7159
Other accounts 962-7621

Documentation 962-7452

Magnetic tape services 962-7614

Microcomputers
Appointments for demonstrations 5-3791
    (Off campus phone number) 962-7151
Consultation on equipment 962-7174
Custom technical services 962-7453
Purchase of microcomputers 962-3452

New software requests 962-7166

Production jobs & special handling . . 962-7602

Purchases
Computing materials & supplies 962-7614
Magnetic tapes 962-7614
Microcomputers 962-3452
Used equipment 962-7615

Repairs
Macintosh microcomputers 962-7663
Terminals 962-7663

Subscriptions to the Newsletter 962-7159

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

**Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637**

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name

_____

Address

_____

Address

_____

Address

_____

City

_____

State   Zip

_____

UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Table of Contents

GENERAL NEWS

Computation Center Open House

COME AND SEE THE NEW COMPUTATION CENTER!

On Friday, December 6, from 3:00 p.m. to 5:00 p.m., the Computation Center is throwing open its doors at 1155 East 60th Street to all its customers. We will have tours of our new facilities (including the machine room), exhibits, demonstrations, and refreshments.

The Board Of Computing Activities And Services 1985-86

The Board of Computing Activities and Services was established to provide policy and general guidance to the University in all matters of computing activity and services. It advises the President and Provost with respect to all such matters; it sets policies regulating the scope, functions and objectives of the Computation Center and computing activities and services on campus; it develops, reviews and recommends long-range plans; and it reviews and recommends approval of the annual Computation Center budget for expenditures and income.

The members of the Board of Computing Activities and Services for 1985-86 are:

Robert L. Graves, Chairman; Associate Provost, Computing and Information Systems, and Professor, Graduate School of Business

W. David Arnett, Bernard and Ellen C. Sunny Distinguished Service Professor, Departments of Astronomy and Astrophysics, Physics, Enrico Fermi Institute and the College

Robert L. Ashenhurst, Professor, Graduate School of Business and Marshall of the University

Peter F. Dembowski, Professor, Department of Romance Languages and Literatures and the College

Eugene DeSombre, Professor, Ben May Laboratory, and Director, Biomedical Computation Facilities

Todd Dupont, Associate Chairman, Department of Computer Science, and Professor, Department of Mathematics and the College

Harry A. Fozzard, M.D., Otho S. A. Sprague Professor, Departments of Medicine and Pharmacological and Physiological Sciences

Leo P. Kadanoff, John D. MacArthur Distinguished Service Professor, Department of Physics, James Franck Institute and Enrico Fermi Institute

Walter E. Massey, Vice President for Research and for Argonne National Laboratory, and Professor, Department of Physics

Norman Nie, Professor and Chairman, Department of Political Science, and Research Associate, Cultural Pluralism Program, NORC

H. Thomas Reepmeyer, Associate Director, Hospital Finance

Steven K. Shevell, Associate Professor, Department of Behavioral Sciences and the College

David L. Wallace, Professor, Department of Statistics and the College

George B. Walsh, Associate Professor, Department of Classical Languages and Literatures, Committee on Ancient Mediterranean World, Committee on General Studies in Humanities and the College

Carolyn D. Autrey-Hunley, Director, Computation Center, *ex officio*

Norman M. Bradburn, Provost, *ex officio*

Hanna H. Gray, President, *ex officio*

Martin Runkle, Director, University Library, *ex officio*

William J. Hogan, Comptroller

Ralph W. Muller, Vice President for Hospitals and Clinics

H. Thomas Reepmeyer, Associate Director, Hospital Finance

Martin Runkle, Director, University Library

Allen R. Sanderson, Assistant Provost

Mridu Sekhar, Associate Director, Medical Center Information Systems

Alexander E. Sharp, Vice President for Business and Finance

Arthur M. Sussman, General Counsel and Vice President for Administration

Administrative Systems Group

The Administrative Systems Group (ASG) has responsibility for setting policy and establishing priorities for the University's primary administrative computer systems. As part of its function, it reviews and funds major systems development projects, and coordinates inter-departmental issues related to administrative computing.

The members of the Administrative Systems Group for 1985-1986 are:

Robert L. Graves, Chairman; Associate Provost, Computing and Information Systems
Carolyn D. Autrey-Hunley, Director, Computation Center
Norman M. Bradburn, Provost
William R. Haden, Vice President of Development

The Committee on Academic Computing

— Steven Shevell, Chairman

The Committee on Academic Computing represents the interests of faculty and students in matters relating to computing. The committee is composed of faculty members from the College, each graduate division, and most professional schools; the Director of the Computation Center and the Associate Provost for Computing are *ex officio* members.

The committee is active in all areas of computing which affect instruction and research. Many issues relate to Computation Center policies and practices. Examples of committee involvement in this area are the recent changes to the classroom account procedures and the increased allocation for Personal Computing Accounts (PCAs). The committee also takes an active role in broader issues. Service cutbacks at the Computation Center were not as great as originally proposed last year because, in part, of carefully documented and vociferous objections raised by the committee.

Computing outside of the Computation Center is another major focus. Microcomputers will soon be available at a number of public sites around campus. The committee will examine how microcomputing sites can be enhanced and expanded to best integrate smaller machines into course work and research, and also will consider the emerging roles of shared minicomputers, communication networks, and supercomputing.

The members of the Committee on Academic Computing for 1985-1986 are:

Harold C. Bloom, Assistant Director for Instruction and Research Information Services, Computation Center
Gregory Colomb, English Language and Literature
Eugene DeSombre, Ben May Laboratory for Cancer Research
Dwight L. Frankfather, School of Social Service Administration
Karen Landahl, Linguistics
Steven R. Loevy, Humanities; Assistant Dean of the College
Harry V. Roberts, Graduate School of Business
James S. Royer, Computer Science
Steven J. Sibener, Chemistry
Richard P. Taub, Social Sciences and Public Policy
Ronald A. Thisted, Statistics

Carolyn D. Autrey-Hunley, Director, Computation Center, ex *officio*
Robert L. Graves, Associate Provost, Computing and Information Systems; Graduate School of Business, ex *officio*

Ethernet Management Committee

The University of Chicago Ethernet networking project grew out of a recommendation of DISCOM, the 1983-1984 Provost Task Force on Distributed Computing. The pilot project was approved to link a number of campus distributed computing sites via Ethernet. The initial sites to be connected included the Computation Center, the Graduate School of Business, the Astronomy Department, the Computer Science Department, the Mathematics Department, the Statistics Department, the Chemistry Department, and Biophysics.

The current Ethernet Management Committee members are:

Scott Anderson, Astronomy and Astrophysics
W. David Arnett, Astronomy and Astrophysics
Carolyn D. Autrey-Hunley, Director, Computation Center
Edward W. Castner, Chemistry
George Chen, Radiation Oncology
Matt Crawford, Astronomy and Astrophysics
Todd Dupont, Computer Science
Paul Ford, Graduate School of Business
James K. Fowler, Astronomy and Astrophysics
Christopher Johnston, Computer Science
Jeffrey L. Krause, Chemistry
John C. Light, Chemistry
Todd Nugent, Computation Center
Charles Pelizzari, Radiation Oncology
H. Thomas Reepmeyer, Associate Director, Hospital Finance
Keith Reynolds, Graduate School of Business
Ronald J. Rusnak, Computation Center
Ronald A. Thisted, Statistics
Michael Townsend, Biophysics and Chemistry
Robert H. Vonderohe, Computation Center

The Diary of a Move

— *Peter Hayward*

As everyone now knows, the Computation Center moved to 1155 East 60th Street over the weekend of September 13. In the Fall *Newsletter*, we out-

lined our plans for the move, but, acknowledging that things don't always go as scheduled, we promised an update.

Because of deadlines, the Fall article was written nearly a month in advance of the move, and from the moment the article was finished, it seems that nothing went according to schedule.

The key element in our planning was to have the Amdahl 5860 installed and operational at 1155 well in advance of the move. This proved impossible when the utility company failed to deliver and install the 480 volt electrical transformers on August 5 as scheduled. The transformers were needed at that time for clean electrical power to install and test the Amdahl and 48 disk drives beginning September 2. One transformer was finally operational on September 5. However, this delay, the subsequent burnout of a smaller transformer that had been miswired at the factory, and the fact that construction of the telecommunications room was not completed meant that we were 30 days late installing and testing nearly all equipment, wiring and communications.

We seriously considered delaying the move by one week to September 20. However, if we had delayed the move and the machines were not immediately stable, the University's payroll, other administrative processing, and academic computing for the beginning of the quarter could have been seriously impacted. We *had* to move the machines the weekend of the 13th and hope for a stable computing environment as soon as possible.

The building contractors, who had been working on a very tight schedule from the beginning, also experienced delays. As a result, we had to postpone the move of the Staff offices (5737 S. University) and Merriam building offices (1313 E. 60th Street) from Friday, September 13 to Tuesday, September 17.

As noted, we had to move the machines on Saturday, September 14 if we were to fulfill our commitment to the University that we would be operational by Tuesday the 17th or as soon thereafter as possible. Staff members worked around the clock on Friday and late into Saturday night to pack and move the 12,000 unit tape library, the Sphinx, 20

disk drives, the printers, communications equipment and other peripherals. Our first serious problem arose late Saturday when we discovered that the new Gandalf communications switch, with its "mass termination" wiring implementation and logic, required wiring modifications. In addition, all cables already installed had to be rerouted because the underfloor ductwork was not completed and the switch could not be placed where we expected. Only after the switch was placed, the cables rerouted, and the wiring modifications made could we make any logical connections to the Gandalf. If power had been available to make the communications tests in the timeframe originally planned, the communications problem could have been diagnosed in advance. However, arising this late in the move, it meant that a clean startup on Tuesday would take nearly superhuman effort.

Saturday night, Sunday and Monday, staff worked to rewire, reload, unpack, and plug miles of cable into thousands of connections.

On Tuesday the 17th, the Amdahl, Chip, and Sphinx came up for business, and we finally moved the Staff and Merriam offices. However, the rewiring of the Gandalf switch had involved the staff originally scheduled to complete the communication connections at Usite, Pick, Regenstein, and other locations. As a result, only about 10% of our communication lines were available Tuesday morning. The machines were stable, but as we anticipated, we experienced a higher than normal level of disk failures. A Commonwealth Edison power failure on September 20 put us back by about one working day, and unexpected problems with the cables and Ethernet connections between 1155 and campus put additional strain on the communications network. Work progressed during the week on the communications problems: by September 20 we had over 50% of the lines operational; by September 27 we had over 90% operational.

We regret any inconvenience our users suffered during the move period, and appreciate the patience and understanding which they displayed. We also want to thank the construction people, the vendors, the movers, and the University offices and individuals that assisted in the move. Most importantly, we want to acknowledge that without the many selfless contributions of the Center's staff,

we would still be "off the air."

We feel that we are now in quarters from which we can provide the best computing support to our users. Please come visit us during our open house on December 6, from 3:00 - 5:00 p.m., and see our new home. We will have tours, exhibits, and refreshments.

Output Delivery Service

— *Laura Cuzzillo*

It is possible to arrange for delivery of printed output from the Computation Center to other locations on campus. The deliveries are provided by University Transportation and the fee for this service is $5.75 per trip per box (or any part thereof). In order for deliveries to begin, the user must have a private bin and associated ROOM (delivery) code for segregation of output at the Computation Center I/O area. Space for private bins is limited, and is allocated on a first-come, first-served basis.

To request this service, contact John Stark at 962-7603. Please be prepared to provide the following information:

- a 3 or 4 character ROOM code for the bin
- a project ID to which fees can be charged
- the building and room to which deliveries are to be made
- the number of times per day deliveries are to be made
- the times deliveries should be made
- the names of individuals other than messengers who may pick up the output

New SERVICES Listings in the Notice File

— *Yvonne Behn*

The online Notice File now contains a category listing the various services provided by the Computation Center, including the hours and telephone numbers. The category is "SERVICES," and each entry deals with a specific area. For example, SVC2 lists the telephone numbers to access the Computation Center computers; SVC3 gives USITE hours and telephone numbers; SVC12 has information about the Microcomputer Demonstration and Development Lab.

To access this information in the Notice File, type "NOTICE" at the prompt on either the DEC-20s or MVS. Once you have entered the Notice File, request "SERVICES" for a listing of the entry titles. A complete list of service entries is in the New Documentation section of this *Newsletter.*

Access to Instructional Computing

— *Don Goldhamer*

Earlier this year, the Committee on Instructional Computing recommended the modification of the computer accounting system to facilitate the timely allocation of classroom computer funds. A system to meet this need is being developed for use in Winter quarter.

At the present time, each student without a Person-ID is assigned one at the beginning of the academic quarter. This four-character ID can be found printed in the upper right hand corner of the student's validation card. Each student's Person-ID

will be enrolled in one of several general "subsidy projects."

The resulting Logon-ID (their "subsidy account") will be used for all instructional computing (and later, PCA computing as well). All subsidy funds to which a given student is entitled will be pooled for use of all Computation Center machines.

The first phase of this system will allow students to draw upon instructional computing funds. By logging on to MVS/TSO, each student will be able to specify that (s)he is enrolled in (or is dropping) a particular class. On the basis of this information, the appropriate level of computing funds will be added to (or subtracted from) the student's subsidy account.

Students will also be able to specify which machines they wish to use, and, on the basis of this information, accounts will automatically be created and opened on those machines within 24 hours. Dollar amounts on all machines will be drawn from the student's single pool of funds, and will be reconciled and adjusted by the Center's daily accounting.

Those students who begin the quarter without funds, or who have spent all of their funds (and thus cannot logon under their own Logon-ID), will be able to logon under a free Logon-ID. This Logon-ID can be used solely to claim initial subsidy funds for their own account or, if they are using the system for the first time, to learn their own subsidy account Logon-ID.
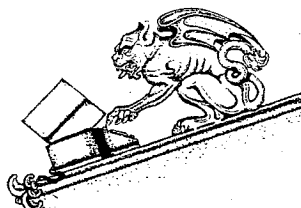
Computation Center Disk Backups and Restores

— Ralph Earlandson

Operating Services backs up onto tape all public disk packs on the Amdahl 5860, the DEC-20s (Chip and Dale), and the Pyramid (Sphinx). The public disk packs include PUB001 - PUB019 on the Amdahl; CHIP:, CS1: and CS2: on Chip; DALE:, DS1: and DS2: on Dale; and U1 on Sphinx. Two types of backups are run: full and incremental. In a full backup, all datasets that are on the disk at the time of the backup are copied to tape. Incremental backups are different from full backups in that only those datasets that have been created or updated *since* the last full or incremental backup are copied to tape.

Weekly onsite backups

The Computation Center performs two types of full backups — onsite and offsite. Full onsite backups are run every weekend. These weekly cycles are known as the Monday backups, determined by which Monday of the month (first through fifth) follows the weekend on which they are run. For example, if the Monday is the first one of the month, the Monday-1 cycle is run. A separate set of backup tapes is assigned for each cycle. Each set of tapes is retained for one month, until the corresponding Monday occurs in the following month, at which time that set of tapes is written again. Because a fifth Monday occurs only four times a year, data on the Monday-5 tapes is retained as long as four months.

Offsite backups

In addition to the Monday backups, all public packs on the Amdahl and DEC-20s are backed up offsite on alternating even- and odd-month cycles. The main purpose of offsite backups is to have tapes for system restoration in the event of a major disaster at the operations site. All tapes for the offsite backups are stored at a location away from the Computation Center and are brought on site

only when these backups are to be run. These full backups are run on or near the 15th of each month. The odd-month backups are run in odd-numbered months (January, March, May, etc.), and the even-month backups are run in even-numbered months (February, April, June, etc.). Thus, the retention time for offsite backups is two months.

Incremental backups

As stated above, incremental backups only copy to tape those datasets that have been created or updated since the last full or incremental backup. Incremental backups are run daily. Each daily set of tapes is retained for two weeks for the Amdahl backups and one week for the DEC-20 and Sphinx backups.

Restoring non-PCA datasets

To request a restoration of one or more datasets from a backup tape, call Ralph Earlandson at 962-7621. The charge is $15.00 per tape setup. An entire group of datasets under the same logon-ID can be restored for $15.00, as long as they were on one PUBnnn pack or DEC structure (requiring only one tape setup). On the other hand, it will cost $30.00 to restore only two datasets that were on two different packs (requiring two tape setups).

The restoration fee can be charged to MVS projects that allow non-machine charges. However, many projects, including all Personal Computing Accounts (PCAs), do not allow such charges. In such a case, the user must pay in advance before the restore can be performed, either with cash or by an inter-departmental order (Comptroller form 62). Payment may be made at the Computation Center Business Office. For DEC-20 restores, the MVS project- and person-IDs linked to the DEC username will be charged (again, provided non-machine charges are allowed, otherwise payment must be made in advance).

It is important to emphasize that most backup tapes are retained for no more than one month before being written over by the next cycle. (The only exception is the Monday-5 cycle.) Restores from offsite tapes will be performed only if the data is recoverable in no other way. Thus, users should make certain a dataset is no longer needed before

deleting it.

User backups

Furthermore, users wishing to keep copies of datasets for a long period of time are strongly urged to have their own backup tapes, and to back up datasets on a regular basis. Instructions for backing up datasets to tape can be found in the manual on Magnetic Tape Usage (R114). The Computation Center backups are designed primarily for recovery of disk packs from head crashes and other system failures, not for long-term storage of data.

Restoring PCA datasets

There is a separate system of backups for datasets from PCAs that have expired or run out of money. Each week, such datasets are backed up to tape and then deleted from disk. Unlike the general backups, these tapes are retained for one year before being written by the next cycle. Users wishing to restore datasets from old PCAs can do so for a single charge of $15.00, regardless of the number of disk packs involved. Call Carmen Fernandez in Business Services, 962-7159, to arrange PCA restores.

Ethernet Update

— *Ron Rusnak*

With the move of the Computation Center to 1155 E. 60th Street, the Ethernet has been extended from Walker to the new site, a distance of about 1.5 kilometers.

Two new sites have been added to the Ethernet. The Statistics Department has three Sun workstations named galton, karl, and egon. The Chemistry Department has a VAX 750 named alchemy.

The Ethernet committee also plans to add a connection to Radiation Oncology during this fiscal year.

Corresponding Via Network Mail

— Jim Lichtenstein

With the availability of networks such as Ethernet and Bitnet, users can send messages or files to users on other computers both on campus and around the world. This article gives examples of how to send such messages, with addresses to use for both sending and receiving mail on the various computer systems.

Mail on the Ethernet (chip, sphinx, gargoyle, oddjob, etc.)

If you are logged onto a machine on the local ethernet and your correspondent receives his or her mail on a machine also on the local ethernet, you can send mail using the following address:

    user@machine

For example, if "a1.alpha" on chip is sending mail to "beta" on sphinx

    the address is beta@sphinx
    the return address is a1.alpha@chip

This works for all machines currently on the local ethernet and should continue to work as the network is expanded and as the mailing systems are improved overall.

It is extremely important to note that, as of this moment, neither Dale, our other DEC-20, nor the MVS system (running on our Amdahl 5860) is connected to the ethernet. This means that the above noted form of address CANNOT be used for these two machines.

Mail reception on DALE

Mail arrival on Dale is completely dependent on how each particular user has set his or her forwarding on the DEC-20s. The following article on "Personal Mail Forwarding" discusses how to do just that. Even though Ethernet mail cannot be sent directly to Dale, it can be received there if the recipient has set up his DEC mail forwarding appropriately. If a user specifies that all mail is to be forwarded to Dale, it will arrive there. Note, however, that Ethernet mail must still be addressed to Chip. Many machines on the ethernet do not know of Dale since Dale is not on the network.

Mail from a machine on the Ethernet to the MVS system

If you are logged onto a machine on the local ethernet and your correspondent receives his or her mail on the MVS system, you can send mail using the following form of address:

    logonid@UCHIMVS1.Bitnet

For example, if "a1.alpha" on Chip is sending mail to "BIOBETA" on MVS

    the address is
    BIOBETA@UCHIMVS1.BITNET

    the return address is
    a1.alpha%chip@UChicago

Mail from the outside world to UofC systems

If you receive your mail on the MVS system, you should tell your remote correspondents that your address is:

    logonid@UCHIMVS1

If you wish to receive mail on an Ethernet machine, you should tell your remote correspondents that your address is:

    userid%ethernet-machine@UChicago

For example,
        beta%sphinx@UChicago
        a1.alpha%chip@UChicago
        bta%gargoyle@UChicago

Mail from UofC systems to BITNET

If you wish to send mail to a BITNET node outside the university, the address is:

        remote-address@bitnet-node.Bitnet

For example, if your friend tells you that he is known as FLAP and is connected to the Bitnet node at MORDOR:

        the address is FLAP@MORDOR.Bitnet

        your return address is logonid@UCHIMVS1
        or userid%ethernet-machine@UChicago

Personal Mail Forwarding

— Todd Nugent

With the proliferation of computers and electronic mail networks on campus, some users find themselves logging into a number of machines daily, just to check their electronic mail. Fortunately, with the UNIX and TOPS-20 machines there is a solution to this problem in the form of personal mail forwarding.

Forwarding on UNIX

If you normally use Chip in your day-to-day work, but occasionally use Sphinx for some special project, you will want to forward your Sphinx mail to Chip so that you do not miss any mail. To do this, create a '.forward' file in your home directory on Sphinx. For example, although I use Sphinx a great deal, I prefer the MM mail handling program on

Chip, so I have the following forwarding file:

        /u1/todd/.forward

with the following contents:

        systems.todd@Chip

This will instruct all mail which arrives on Sphinx for "todd" to be forwarded to "systems.todd@Chip."

Forwarding on TOPS-20

As of the publication of this *Newsletter*, a new mail forwarding scheme will have been installed on Chip. The old "Forward" program will have been replaced with a system like that used with UNIX. If you already had forwarding set between Chip and Dale, you will find that you already have a TOPS-20 "forward.txt" file. If not, or if you want to change your forwarding, just create a file named "forward.txt" in your PS: login directory. The file must be on CHIP: or DALE:, and not any of the other disk structures.

The format is the same as UNIX, one line with a user and host address. For example, the file DALE:<systems.todd>forward.txt, which contains

        systems.todd@Chip

insures that any mail sent to Systems.Todd on Dale will go to Chip.

It is also possible to specify more than one recipient by separating the addresses with commas. For example,

        systems.todd@Chip,systems.todd@Dale

would be the equivalent of the old "forward -to all."

One difference between the UNIX and TOPS-20 versions of this feature is that on UNIX it takes effect immediately whereas on TOPS-20, the forwarding will not take effect until the next day.

Computation Center Seminars for Winter 1985

— Ed Donner

The Computation Center is offering five short seminars which are open to the general University community. A schedule of the classes follows. These seminars are free of charge and are designed for the new computer user. No prior knowledge of computers is necessary. All seminars will meet in Harper 406.

If you cannot attend the seminars, or if you are interested in other topics, you can view any of our instructional video tapes free of charge at Usite. The topics covered in these videos include magnetic tapes, Superwylbur, the DEC-20s, Unix, Emacs, Muse, SED, and selected topics in microcomputing. Updated listings of available videos are posted by the self-study area at Usite, and are available from the attendant there. As with the live seminars, our video tapes are designed for the new user, so no prior knowledge of computers is necessary.

CC100 - COMPUTER CONCEPTS AND TERMINOLOGY (2 Parts)
Dates and Times: Tuesday and Thursday, January 14 & 16, 3:30 - 5:00
Prerequisites: None
Instructor: Don Crabb
An introduction to computers for those with no previous experience, this two-part seminar provides an overview of general computing concepts and terminology.

CC110 - COMPUTATION CENTER FACILITIES AND SOFTWARE
Date and Time: Tuesday, January 21, 3:30 - 5:00
Prerequisites: None
Instructor: Ed Donner
This seminar introduces the facilities and software available to Computation Center users. The focus of the seminar is two-fold: (1) the kinds of services and hardware the Computation Center provides and (2) the computer software the Center supports.

CC200 - INTRODUCTION TO SUPERWYLBUR
Date and Time: Thursday, January 23, 3:30 - 5:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Ed Donner
A demonstration of the basic features of Superwylbur — how to create and edit text, save and scratch files, run jobs, and set up a PDS.

CC210 - INTRODUCTION TO THE DEC-20s (2 Parts)
Dates and Times: Tuesday and Thursday, January 28 & 30, 3:30-5:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Ed Donner
This seminar introduces the DEC-20s at the University of Chicago. The hardware and software available to the DEC user is surveyed, and the basic commands for creating and manipulating files are demonstrated.

CC220 - INTRODUCTION TO THE PYRAMID/ UNIX SYSTEM (2 Parts)
Dates and Times: Monday and Wednesday, February 3 and 5, 3:30 - 5:00
Prerequisites: CC100, CC110, or equivalent knowledge
Instructor: Melinda Shore
This seminar emphasizes a practical introduction to the Pyramid/Unix system. It will stress how to access the system and explore its power and capabilities.

INTRODUCTION TO THE MACINTOSH
Date and Time: Wednesday, January 15, 3:30 - 5:00
Instructor: Therese Nash, representative from Apple Computer Inc.
This seminar will provide a basic introduction to the Macintosh user interface and applications, including time for questions and answers.

MVS

Surcharge for External Users of SAS

— *Ernie Froemel*

The software lease agreement with SAS Inc. specifically restricts the use of SAS to members of the University community. Non-University people may use SAS at the University of Chicago only if they pay a royalty to SAS Inc.

The Computation Center must account for external use of SAS and provide payment to SAS Inc. each month. In order to do that, usage data will be accumulated each month. The surcharge will then be computed and will appear on the following month's statement to users.

The exact method for calculating this surcharge is still being discussed with SAS Inc. We will keep you informed.

If you need further information, please contact Hal Bloom, the Assistant Director for Instruction and Research Information Services, at 962-7155.

MVS Job Class Assignments

— *Kay Sandacz*

Many users, either because they need the large memory and storage capacity of the MVS system or because they require programs available only on MVS, find themselves dealing with a batch environment. Most of them are frustrated at some time by having to wait for a job that sits in the queue forever, often while a dozen other jobs go through ahead of it. This article attempts to explain how jobs are queued for execution.

The MVS system can run several batch jobs at once, running those that require certain resources, such as tape drives, only when those resources are available. The overall aim is to keep each resource in use as long as there is a job requiring it. As a very simple example, a job that requires a tape drive will not be loaded for execution until a tape drive is available; instead, other jobs will be using the memory space and CPU until the tape drive is available and the job that requested it can be executed most expeditiously.

To achieve this efficiency, each job submitted to the system is assigned a class. A job's class is determined by three factors: the amount of CPU time requested, the priority, and whether a tape will be needed. An alert user can appropriately code each of these factors for his specific job and turnaround requirements in order to take advantage of the system.

How much CPU time is requested?

The amount of CPU time requested is coded on the JOB card with the TIME parameter. Although any number of seconds (and minutes) may be requested, there are four break points for determining class: two seconds or less, 10 seconds or less, one minute or less, and more than one minute. If the user doesn't specify an amount of time, the default is ten seconds. Many jobs will run in two seconds or less and would go through the system much faster if the JOB card specified the smaller amount of time, not only because the job would be

assigned to the category requesting less of a major resource, but also because the ten-second classes tend to be filled with jobs assigned by default.

What job priority is requested?

The priority requested by a job is coded on the JOB card with the PRTY parameter. There are three options for PRTY: 1 is lowest priority and will go through the system most slowly, not until after 5:00 p.m. on weekdays; 2 is normal priority and is assigned by default if no priority is specified; 3 is high priority and will go through the system most quickly. If you need your job output as soon as possible and your logon-ID is authorized for high priority, use priority 3, but be prepared to pay. Rates charged for a job differ according to the priority at which it is run -- see memos 4168, 4169, and 4170 for cost information.

Working over the weekend is much cheaper than during the week. From 5:00 p.m. Friday until 8:00 a.m. Monday, priority 1 jobs run almost immediately; connect and CPU rates are lower, too. You don't even have to be present to take advantage of these rates. A particularly large job, or one requiring many tapes can be submitted any time Friday at priority 1 and will almost certainly be waiting for you Monday morning, having cost less to run. Of course, if you are not certain of your JCL and program, or if you need to check one job before submitting another, you can't really practice such "remote" job entry.

Is a tape setup requested?

If a tape is needed for a job, a SETUP card is required, putting the job in a different set of classes. Before being released to await execution, the job is put on HOLD while an operator locates the requested tape in the tape library. Once the tape is at hand, the job is released and contends with the others for available resources, including tape drives. While you may not be able to avoid mounting a tape sooner or later, you can avoid daytime congestion. If possible, dump data from a tape to disk the night before you run a job on that data, or write data to disk and copy it to tape overnight. This is particularly recommended if the job is likely to be re-run repeatedly, calling for the same tape to be mounted several times.

Although the SETUP card indicates what kind of tape drive is required, it doesn't tell the operating system which particular tape is needed until the job begins execution. Thus, two jobs could run at the same time, each calling for the same tape. Since a tape can be available to only one job at a time, the second job requesting that same tape will use resources while waiting for it, instead of allowing another job to execute. The operating system will ask an operator if such a job should wait or be cancelled, and the operator may cancel it. Sometimes, the operator will see from the SETUP cards that the same tape is required in more than one job and will only release one of the jobs at a time, rather than having to cancel them later. You can avoid the possibility of having such jobs cancelled by not submitting jobs at the same time which call for the same tape. However, if you must submit such jobs, using the same job name on each will prevent the system from trying to run them at the same time.

Job initiators

Given several classes of jobs queued for system resources, which class is submitted at any given time? "Job initiators" actually choose from among the job classes for the next job to submit to the system. Each job initiator is given a set of selection criteria for choosing a class queue. One initiator may always look for a class I job to submit before a class J job, another may always submit any class 5 job first. These criteria are adjusted by the Operating Systems group when necessary to keep resource allocation balanced over time.

If you give some thought to the requirements of your job and the methods by which MVS queues jobs, you'll find batch processing much less frustrating. For information on determining the class of a job you've submitted, determining its position in the queue, and monitoring its progress through the system, see the SuperWylbur Remote Job Entry manual (R81B), section 3.

In the next issue of the *Newsletter*, we will continue to discuss the progress of a job as it moves through the system, this time into the print queues.

New SPSS Graphics Package

— *Eric Nelson*

A test version of the new SPSS Graphics package called SPSSGRAF is available on MVS under TSO. The package is menu-driven; options are selected using the function keys found on terminals with full-screen capacity. The type of plot and the attributes of the output can be specified from the various menus. Data for the plot can be read from an SPSSX system file, a raw data file or entered interactively. Internal help is also available through &HELP, &?? and &? commands.

The system supports the Computation Center Calcomp 1051 plotter, as well as 50 other graphics devices. The WYSE 75 terminals (emulating VT100s) and HP2648 graphics terminals in the public clusters can be used to create graphics output. The HP2648 can be used to view the output as well. Graphics created using the WYSE will need to be sent to the Calcomp plotter. This is done by selecting plotter type CALOFFR4 within the menu for graphics device specification.

SPSS Graphics menu options are defined on eight function keys. These keys can vary according to the terminal, but are usually F1-F8. The function keys for the HP2648 are f1-f8; on the WYSE, use the numeric keypad numbers 1-8 followed by RETURN to select options. (The TVI950 terminals can be used as input devices, but there are unsolved problems. TVI950 retrofit graphics terminals do not currently work.) Other input and graphics devices, including the IBM PC, HP150, and the HP7475 plotter are supported and have been tested somewhat by Computation Center staff.

To use the IBM PC as a graphics device with a monitor or plotter, you will need the SPSS/PC Driver software. This is available at <u>no charge</u> from SPSS, and can be obtained by contacting the SPSS Coordinator.

To run SPSS Graphics in TSO you must first allocate extra region. This can be done during logging on by entering SIZE(2000) after entering

EPIC Now Being Tested

— *Chuck Hodge*

The Computation Center is now testing the Xerox Electronic Printer Image Construction Software (EPIC). As described in the Fall 1985 *Newsletter*, EPIC is a facility which supports the printing of vector graphics on the Xerox 9700 printers. EPIC accomplishes image construction in two phases: vector generation and image generation. The application interface operates with the user programs to create vector information constructed from specific calls made by the user. The output from the vector generation phase is a vector file.

The image generation phase reads the vector information created by the first phase and constructs the corresponding set of printable image files. The resulting image files may be directed to the Xerox 9700 print system for online or offline printing, or stored in a data base on the host computer for later use.

Also under development is a XICS (Xset) procedure which will support the merging of EPIC image files with text elements prepared by the XICS (Xset) facility.

Public access to EPIC directly and through graphics systems such as TELL-A-GRAF will be forthcoming. Watch the logon messages for the latest developments.

your LOGONID and before pressing RETURN. (To permanently change your default region using the ACF "CHANGE TSORGN" command, see Memo 4369, page 4.) At the READY prompt, enter SPSSGRAF. Beginning a session might look like this:

        ACF82003 ACF2, ENTER LOGON ID-
        mylogon size(2000)

        ACF82004 ACF2, ENTER PASSWORD-
        nonsense

        (--- SYSTEM MESSAGES FOLLOW ---)

        READY
        SPSSGRAF

Plot files created for the Calcomp plotter are cataloged and invariably named Calcomp. The Calcomp file will contain as many plots as specified during the session. To queue them for the plotter, run the Plot Clist after you have exited SPSS Graphics. Simply type PLOT after the TSO READY and the Clist will prompt you for the necessary information. The Superwylbur PLOT macro may also be used.

SPSS Graphics also creates other files during each graphics session. These include SCREEN, LOG-FILE and an AUTOLIB file. LOGFILE contains a record of your entire session and can be used for debugging purposes; SCREEN contains other debugging information; AUTOLIB.SPSSGLIB contains any libraries, datasets, and graphics device specifications you have chosen to save. While we are in the test phase, the debugging files will automatically be created each time you use SPSSGRAF. You will need to delete these files after each session if you do not want to keep them.

This is a test version, and two problems currently exist. Occasionally the program will drop you out of TSO and you will get "enter s for superwylbur or tlogon for tso." To return to the program, type TLOGON, then use the TSO RECONNECT command after your LOGONID to get back to the session, e.g.,

        ACF82003 ACF2, ENTER LOGON ID-
        mylogon rec

The screen will not change, so type &REFRESH and hit RETURN. The menu you were in should reappear. Usually there are no ill effects from this problem.

The second problem occurs during the presentation of the menu screen. At certain points the screen will show only the top line and a hyphen on the second line. Getting out of this may require turning off your terminal and logging back in with the RECONNECT command as above.

Refer any problems to the SPSS Coordinator at 962-7575 (afternoons only) or send mail (and the LOGFILE which is created with each run) to XASERIC. Using the F9 function key, you can also save screen information if it is relevant to the problem.

Documentation is located at Usite (manual number R1N). The manual is also available at local bookstores.

Full Screen Editing on TSO

— *Gary Buchholz*

ISPF (Interactive System Productivity Facility) is a program development tool on TSO available to users of the 7171 protocol converter. ISPF can perform many functions, one of which is granting access to a full screen editor. The Fall 1985 *Newsletter* included an article introducing users to the 7171 protocol converter, the 3270 type terminals and VTAM. The following paragraphs will attempt to introduce first time users to the full screen editing function.

What you'll need

Since ISPF exploits the full use of 3270 type terminals, one of the first things you will need is the 7171 "mapping" that translates keys on your par-

ticular terminal into the 3270 equivalents. A listing of the terminal types currently supported is in the Fall *Newsletter*, and the mappings themselves are members of the catalogued dataset, SYS.ISPF.TERM7171. Having secured this mapping, you are ready to begin.

Logon to TSO through the 7171 protocol converter by specifying VTAM in response to the ENTER CLASS prompt. Respond to the TERMINAL TYPE prompt with your terminal type; enter "?" to get a list of supported types.

ISPF needs a special logon proc. To gain access to this, enter the following at the ACF2 LOGON ID prompt:

> ACF82003 ACF2, ENTER LOGON ID-
> logonid PROC(SPFTSO)

(If you wish to make this special ISPF proc your default, invoke the TSOPROC command in TSO. You will be prompted for the necessary information.)

After being logged on, invoke ISPF by simply typing "ISPF". The next thing you will see is the PRI-MARY OPTION MENU displaying the various functions available. At this point you may well note option "T" which provides an online interactive tutorial. For the purposes of this article, however, we will simply assume that you wish only to create a new data set for the purposes of "trying out" the full screen editor.

Allocation

To allocate a new dataset, begin at the primary option page and select UTILITIES (option 3). ISPF will display the UTILITY SELECTION MENU. Select DATASET utilities (option 2). ISPF will next set up a dialog requesting information. Use the cursor control keys appropriate to your particular terminal to fill in the requested information. ISPF wants to know PROJECT (high level qualifier of the dataset - your logon-ID); the LIBRARY (a second qualifier); and the TYPE (a descriptive third qualifier; use DATA). Having filled in these three fields and selected A (allocate), press the "enter" key.

Allocation further needs to know something about

the dataset attributes. Having pressed "enter," ISPF will display the default attributes it has selected. If these are satisfactory, press "enter" to perform the actual allocation. ISPF will allocate an empty PDS.

Program Function (PF) key 3 (check terminal mapping of PF keys) is equivalent to the "END" command, and will always get you "back" to the previous menu. Having allocated the new dataset, press PF3 to get back to the UTILITIES menu. Pressing PF3 once more gets you to the PRIMARY OPTION MENU. By using PF3 you have just retraced your steps from the main menu.

Full Screen Editing

ISPF editing is done in storage. The larger the file you wish to edit, the more storage is required. You may wish to request a larger region when you logon. The preceeding article on SPSS Graphics describes how to do this. The maximum amount of storage you may request is SIZE(4096), four megabytes.

You are now ready to try some editing. At the main menu select EDIT (option 2) and press "enter". ISPF will put up an EDIT ENTRY dialog requesting the name of the dataset to be edited. Fill in PROJ-ECT, LIBRARY and TYPE as before. You will also need a member name. Type in any name (say, "TRYIT"). Press "enter".

You are now in the full screen editor. Some commands will be entered on the COMMAND line; others will be entered at the far left in the line number field.

Position the cursor at the far left just under the word COMMAND. Type "I" (Insert) then press "enter". Type a few lines of text at the prompt. To end the insert process type a null line (simply "enter"). To save the dataset, use the HOME key (or cursor control) to get back to the COMMAND line. Type the command SAVE to save the dataset. Additional lines of text may be added at any point by positioning the cursor to the far left at the point of insertion and typing "I". Again, end the insert process by entering a null line. Lines of text can be deleted with the "D" directive. Any text on the page can be altered simply by positioning the cur-

sor to the target text and typing over it. The full set of editor directives can be examined by going through the help sequence made available by typing HELP on the command line. Help is available at any point in your ISPF session by pressing PF1.

After you have finished using the editor, press PF3 to save the dataset and return to the edit ENTRY PANEL. Press PF3 once more to get to the main menu. At this point choosing option X will allow you to exit ISPF after specifying "D" (delete) for the process option for the ISPF log dataset.

The ISPF editing functions are extensive. What has been presented here was simply an attempt to take you into the editor. For further information we suggest that you work through the ISPF tutorial available from the primary ISPF menu page.

TOPS-20

Update on New DEC-20 Accounting System

— Todd Nugent

The new DEC-20 accounting system has been installed. It facilitates the creation and deletion of DEC directories while also tying the DEC-20s more closely to the Computation Center's other computers. Most changes are transparent to users.

The MVS logon-ID (project/person combination) to which each DEC-20 directory is billed and its dollar balance now appear in each directory. This information can be viewed with the "Information Directory" (I DIR) and "Money" commands. It is no longer necessary to allocate separate funds to the DEC-20s; there is a common dollar balance for each DEC-20 account and its MVS logon-ID. This means that the daily change in the MVS logon-ID dollar balance, whether displayed on MVS or on the DEC-20, will reflect activity on all Computation Center computers for that logon-ID.

New DEC-20 directories are now created automatically by the Center's accounting system. The new directory names consist of the first letter of your MVS person-ID, followed by a period, followed by your MVS logon-ID. Thus if you request a new DEC-20 directory and your MVS person-ID is "MAMA" enrolled in project "POP" (your MVS logon-ID is "POPMAMA"), then your DEC-20 directory will be "M.POPMAMA". At present, only the

Center's Business Office can enroll you on the DEC-20s, but in the future you will be able to enroll yourself from MVS/TSO.

New Programs on TOPS-20

— Todd Nugent

A number of new programs have been installed on TOPS-20, most of which deal with networks:

Ruptime
> Displays a list of other hosts on the campus-wide ethernet that are running the rwho software, along with their load averages and time since last startup.

Rwho
> Rwho is like ruptime, except that it lists all users logged onto all of the machines running the ruptime software.

Tops20
> An introduction to the command interface on TOPS-20. The program is a tutorial on the use of the escape key, "?", ^R, ^W and the other features which make TOPS-20 so friendly.

Finger
> Has replaced the old TOPS-20 User program with the added capability of being able to remotely "finger" users on other ethernet hosts. (See the article on the Finger program in this section.)

New Mail Forwarding
> The TOPS-20 Forward program has been replaced by the FORWARD.TXT file which is created in the user's PS: directory. (See "Personal Mail Forwarding" in this *Newsletter*.)

New Telnet program

This is a new version of the Telnet program with better flow control. The Telnet program allows virtual terminal logins on other machines on the campus ethernet. See "@Help Telnet" for more information.

Autobaud to 9600

The DEC-20s now support autobaud up to 9600 baud. Connect to class "chip" through the Gandalf and type (^C) for speed selection.

The New MONEY Program

— *Kay Sandacz*

In concurrence with changes in accounting procedures, the MONEY program has taken on a new appearance. This utility program previously allowed DEC-20 users to monitor the charges accruing against their directories, breaking them down into categories such as tape usage, disk usage and cpu usage. With the accounting system changes, the information on specific charges is no longer available on the DECs and the MONEY program will not report these breakdowns. The same information is available, however, through batch jobs run on MVS. See Memo 4349 for information about such jobs.

Previously, the MONEY program displayed a dollar balance for the directory from which it was run. It now displays the dollar balance for the MVS logon-ID to which the DEC directory is being charged. You can find out which logon-ID is being charged for a directory by checking the account shown in response to the "Information Directory" (I DIR) command. The logon-ID is also shown when you logout on the DECs.

The dollar balance displayed is the amount of money spent or remaining (as of the last accounting run) for use on all machines by a logon-ID. It is no

longer necessary to allocate a certain portion of your account's money specifically for DEC use, nor to request transfer of additional funds to DEC accounts as they run out. These new dollar balances more accurately reflect an account's current status: it will no longer be possible to run out of funds on MVS, resulting in a locked account, even though the MONEY program on the DEC shows funds remaining.

In the infrequent situation of many DEC directories being charged to the same logon-ID, the dollar amount shown for any of those directories is the balance for all directories, as well as Sphinx and MVS usage being charged to that logon-ID. If that logon-ID runs out of funds, all of the directories charged to it will be locked. Computation Center personnel have been talking with users who have multiple directories billing to the same logon-ID to verify that this arrangement will serve the users' needs, or to help them establish a different mapping of DEC directories to logon-IDs.

FINGER on the DEC-20s

— *Kay Sandacz*

As the new accounting procedures prove stable on the DEC-20s, other related changes will be taking place. The USER program, a utility which allows DEC users to associate directory names with "real" names, has been replaced by the FINGER program.

Unix users will recognize FINGER as a combination of the Unix FINGER and FING programs. FINGER on the DECs allows you to search by last name for a user name, check the status of a user (time of last login, whether he has unread mail) by user name, leave a 'plan' in your own directory for others to check, and even search by last name for user names on different machines. Like USER, FINGER does work from within MM, allowing you to

check a user name during a mail session.

The basic command for FINGER is 'FINGER NAME' where NAME is a last name whose user name you need; or 'FINGER USER' where user is a DEC user name whose "real" name you need. Depending on protection levels set by the user you finger, the program will display information about that user.

If the user is logged in, you will see his 'real' name, his line number, and the program he is currently using. If he has set appropriate protection levels for his directory and files, you will also be informed whether or not he has unread mail and when he last read his mail. If the user is not logged in, FINGER will inform you of that fact and will skip the information on program and line in use. The other information displayed will be the same, but FINGER will also type the contents of a FINGER.PLAN file if the user has created one with protections appro-

priately set. FINGER.PLAN must be created on the public structures (CHIP: or DALE:), and the file protection should be set as follows:

    @set file protection FINGER.PLAN 775252

The user must also set his directory protection in order for FINGER.PLAN to be typed:

    @set directory protection
    ps:<USER.NAME> 774040

Thanks to Ethernet, FINGER used on Chip can also display information about users on connected machines. The command 'FINGER NAME@HOST' will show information about anyone with last name NAME who has an account on machine HOST. FINGER also has various switches available for tailoring requests to specific information; HELP FINGER will give a list of those switches and their functions.

PYRAMID/UNIX

New Pyramid Releases

— Ron Rusnak

The Computation Center will be installing a new release of the Pyramid Operating System on Sphinx. This will be Version 2.5, which is the version currently running on Computer Science's Pyramid. We expect to have the new release installed by January. Concurrent with the new operating system, we will be installing a new version of Pascal.

The new versions of the operating system and Pascal are primarily maintenance upgrades. The operating system upgrade is expected to provide a 4 to 6 percent improvement in overall performance on the system.
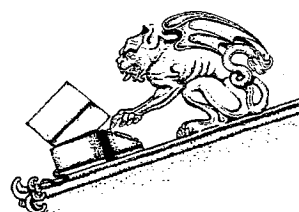
MICROCOMPUTING

Printing Microcomputer Text Files on Xerox 9700 Printers

— Melinda Shore

Campus microcomputer users have expressed considerable interest in moving text files from the micros in their home or office to the Computation Center's mainframe computers, both for further processing and for printing. The availability of inexpensive, high-quality, high-speed printers (the Xerox 9700s) makes this an attractive option.

Almost all microcomputer word processors imbed formatting information in the text. This includes flags for font changes, underlining, bold, and so on. Information about headers, footers, and footnotes is also encoded in a special form. Some word processors, such as MacWrite, further complicate matters by storing paragraphs in nonsequential order or compressing the text so that it takes less storage space on disk. As a result, a file created with a word processor and uploaded to one of the mainframes will probably not be editable on the mainframe, and it certainly won't print correctly on the 9700s.

Using WS97 and Muse97 to print WordStar and WordMarc files

If you are a WordStar or WordMarc user, a good solution to the printing problem is to use WS97 or Muse97 on the DEC-20s. These two programs take files prepared on their respective word processors, and print them on the 9700 with full support for font changes and text attributes such as bold, underline, and super- and subscript. These programs translate the special formatting information in the text into the form used for controlling the 9700s. In general, WordStar files that have been uploaded for use with WS97 cannot be edited on the mainframes, but WordMarc files can be edited using the Muse word processor on the DEC-20s. For more information on Muse97 and WS97, see Memos 2050 and 2058, respectively. When resources allow, the Center will be supporting additional word processing formats in this manner.

Saving files without formatting information

Most word processors have a function that allows users to save a version of a file that has the formatting information stripped out. For example, MacWrite and Microsoft Word on the Macintosh have an option to save a file as "Text Only," and WordPerfect, which runs on MS-DOS systems, has a "Text Out" function. By using these functions you can create a copy of a file that is both suitable for editing on other computer systems and printable on the 9700s. The problem with doing this is that the special formatting information is stripped out of the text and lost.

Converting file formats

There are both commercial and public-domain programs for converting file formats. WordPerfect version 4.0 and higher comes with a utility called CONVERT.EXE. This utility allows the user to translate to and from various file formats, including from WordPerfect to WordStar. The resulting file is not suitable for input directly to WS97, but must be printed to disk using the procedures outlined in Memo 2058.

Preparing dissertations on micros

Dissertations present special problems. The formatting and printing requirements for the Dissertation Secretary are quite rigid. The TREATISE program was created to address this issue. TREATISE is a text processing program that formats text according to the specific requirements of the Dissertation Secretary and produces results suitable for printing

on the 9700s. Typically, using an editor such as SuperWylbur or Emacs, a user prepares a file that contains both the text of the dissertation and commands to TREATISE. It is certainly possible to use a microcomputer word processor to prepare the file, but not while taking advantage of the special formatting features of the word processor. For example, word wrap and justification must be off, and text attributes such as bold and underscore must not be used. After the file is edited, it must be saved as text only. If you're using WordStar, edit the file in non-document mode. Once the file has been uploaded to the Amdahl using Kermit, you can format it by invoking the TREATISE macro. For more information about TREATISE, see Memo 4373 and the TREATISE User's Manual.

Macfest Videos

— *Ed Donner*

On Wednesday, October 23rd, over 2,000 students, faculty and staff visited Ida Noyes Hall to see vendor displays, software demonstrations, and seminars. The occasion was MacFest — a public festival jointly sponsored by the University of Chicago Computation Center and Apple Computer, Inc.

The event provided an opportunity to see some of the software and hardware available for the Apple Macintosh microcomputer, to talk with software developers and Apple representatives, and to attend special presentations on how the Macintosh is being used at the University. Those who were unable to attend the event or who missed sessions can view video-tapes of some of the proceedings. Any of the following videos can be obtained from the Usite attendant and viewed free of charge in the self-study area at Usite. They will also be available for viewing at the Computation Center Open House on December 6.

NETWORKING AND DATACOM
> An Apple representative describes hardware and software considerations for data communications and networking Apple computers.

MICROSOFT - EXCEL
> An integrated spreadsheet and graphics package with some database and a powerful macro capability is presented in a quick overview.

MAC-3D
> In this video, Challenger Software demonstrates the production of three-dimensional graphics with MAC-3D.

LOTUS-JAZZ
> This integrated spreadsheet, graphics, word processing, database management, and communications package is described and demonstrated.

ODESTA HELIX
> The use of Odesta Helix for database management and form generation is demonstrated.

APPLES AT THE UNIVERSITY OF CHICAGO
> This video presents some of the software developments that have taken place on campus. After an overview of Apple computers on campus, the video features presentations by campus figures who have developed software to do such things as remotely operate a telescope and measure cell mass. Software development on campus is also explained in another "Apples at the University of Chicago" video that was presented at the Apple Inter-University Consortium last year.

Hewlett Packard 150 Kermit Now Available

— Yvonne Behn

The newest Kermit available through the Computation Center is for the Hewlett Packard 150 microcomputer. Kermit is a communications program which allows files to be transferred between various microcomputers and the Computation Center mainframes. Kermit packets are available through the Business Office, 1155 E. 60th Street, Room 336, for $15.00, and include a diskette with the Kermit program, a copy of the memo explaining its use, and a copy of the *Kermit User's Guide*.

Kermit is now available for the following microcomputers:

- Hewlett Packard 150
- IBM-PC and look-alikes
- Macintosh 128, 512, XL
- Kaypro II, 4, 10
- Morrow Micro Decision 1, 2, 3
- Apple CP/M with Super Serial, CCS 7710 or MMII cards
- Osborne
- Apple II, II +, and IIe under DOS 3.3

The following Kermit documentation is available on-line through DOCLIST:

R138 *Kermit User's Guide* (KermitUG)
R138A *Kermit Protocol Manual* (KermitPM)
R152 *Kermit-MS Reference Manual* (KermitMS)
R154 *Kermit FOR TSO* (KermitSO)

Memo 6000, "Kermit for CP/M"
    (covers all CP/M Kermits released)
Memo 6001, "Kermit for the IBM PC"
    (includes HP150 support)
Memo 6002, "Kermit for the Apple II, II +, and IIe under DOS 3.3"
Memo 6003, "The Macintosh Kermit"

Copies of the documentation are also available at the terminal clusters and at Regenstein Reserve.

Microcomputer Distribution Center Update

— George Bateman

Racal-Vadic modems, Lotus software, and Microsoft software and peripherals are now available thru the Microcomputer Distribution Center. The latest MDC price list, dated October 21, 1985, features products of these vendors, along with Minitab and WordMarc (Muse) for IBM and Zenith PCs. Several revisions have also been made to the Apple, Hewlett Packard, IBM and Zenith listings. The price list is available at USITE (Wieboldt 310), the Computation Center (1155 East 60th St.), and the MDC (1307 East 60th St.). The Microcomputer Distribution Center is open Monday through Friday from 10:00 a.m. to 4:00 p.m. and can be reached at 962-6086.

What's New in the Demonstration and Development Lab

— Yvonne Behn

The following new products have been added to the Microcomputer Demonstration and Development Lab, 1155 E. 60th Street. To make an appointment to see any of the hardware or software in the Lab, call 962-7151.

New hardware includes:

- **AT&T 6300 +** - An IBM-AT compatible machine; switchable between MS/DOS and UNIX operating systems; IBM compatible graphics card built into mother board
- **AT&T 7300**- AT&T UNIX machine
- **Hewlett Packard Vectra**- IBM-AT look-alike

A large amount of software for the IBM-PC has recently come into the Lab and includes:

Terminal emulation packages:
*SPSS/PC Driver software - Allows PC to be used as a graphics device for mainframe SPSSX graphics system. (See SPSSX Graphics article in this *Newsletter*.)
VTERM - Tektronix 4010 graphics and VT100 terminal emulation package; allows PC to be used as a graphics terminal to TELL-A-GRAF, SPSSX graphics, SAS, or any other system which supports the 4010.
IBM 3101 Terminal Emulation Program
Word processing packages:
Professional Editor Version 1.0
Script/PC Version 1.0
Display Write 1 Version 1.0
Display Write 3
IBM Writing Assistant Version 1.01
Personal Editor Version 1.0
Database managers:
IBM Filing Assistant Version 1.0
Graphics packages:
Graphical Kernel System Version 1.0
Graphics Development Toolkit
Plotting System Version 1.0
Operating systems:
PC-DOS Version 2.1
PC-DOS Version 3.1
Programming languages:
APL Programming Language Version 1.0
FORTRAN Compiler Version 2.0
Graphical File System Programmer's Guide Version 1.0
Macro Assembler Version 2.0
Professional FORTRAN Version 1.0
Top View Programmer's Toolkit Version 1.0

Index systems:
Zylab - Full text index system on IBM-PC
Project manager software:
IBM Planning Assistant Version 1.0
Reporting packages:
IBM Reporting Assistant Version 1.0
Utilities:
Personal Computer Organizer Ver. 1.0
EZ-VU Runtime Facility
Data Training Edition Version 1.0
Reports + Edition
Data Edition
Plan + Edition
Fixed Disk Organizer Version 1.0 (For IBM XT with 512K)

The following software for the Macintosh is also new in the Lab:

*Helix - Database system
Red Ryder Version 6.2 - Terminal emulation system
Lotus Jazz - Integrated spreadsheet program (for 512K Mac)
*Microsoft Excel - Spreadsheet (for 512K Mac)
*DBMaster - Database system
*1stBase - Database system
Crunch by Paladin - Integrated spreadsheet, database and graphics software package
Filevision (Business Filevision) - New version of the database system

* Can be demonstrated in the Lab

Since the *Newsletter* is now published quarterly, we recommend using the MICLAB program on either DEC-20 to obtain up-to-date information about hardware and software in the Lab. Using the "new" option, you may limit the display to hardware and software acquired within the last month or week. A complete listing of all hardware and software can also be obtained through MICLAB, or copies are available from the receptionist at the Computation Center, 1155 E. 60th Street.

DEPARTMENTS

People

People who have left the Center:

Joseph Barnosky, Student Program Advisor, has gone to California. **Crystal Hoskins**, Data Entry Clerk, has transferred to the Audit and Control Department in the Hospital. **Myra Squires**, Production Expeditor, has left the Center. **Stephen Upp**, Demonstration Laboratory Assistant, has left to attend school at the University of Illinois at Chicago. **Stephen Westfall**, Senior Staff Analyst, has left the Center to join the firm of InfoTronx.

Transfers/Promotions within the Center:

Yvonne Behn is now Documentation Specialist in Instruction and Documentation Services. **Joyce Morris** is the Administrative Coordinator of the Microcomputer Distribution Center. **David River** is Student Program Advisor and Cluster Attendant. **Melinda Shore** and **Eric Nelson** are now Junior Programmer/Analysts II in Application Systems. **Connie Smith** is now the Center's Receptionist. **Robert Thompson** is now Junior Programmer/-Analyst I in Application Systems and Stock Clerk in the Microcomputer Distribution Center. **Michael Willey** is now Manager of Operating Systems and Hardware Planning.

People who have joined the Center:

Fareed Asad-Harooni is a Programmer/Analyst in Administrative Information Services, working in the area of Model 204 support. **Nicholas Burke** has rejoined the staff as a Junior Programmer/Analyst II in Library Computer Systems; in 1984 he had worked with the Center's Information Systems group. **Kenneth Boysaw** is Documentation Assistant in the Instruction and Documentation Services group. **John Dennison**, **David Friedman** and **Theodore Kim** are Stock Clerks in the Microcomputer Distribution Center. **Dianne Dudley** has joined the Center as Secretary for Operating Services, Communications Services, Information Technologies and New Services, and Business Services. **Lawrence Gryziak** and **Peter Schabinger** are Microcomputer Demonstration Laboratory Assistants. **Robert Hettinga** and **Thomasz Sobczak** are Production Expediting Trainees. **James Lindholm** is a Programmer/Analyst in Business Services. **Rebecca Wilson** and **James Wolf** are Junior Programmer/Analysts I in the Library Computer Systems group.

Documentation

Recently Updated Documentation

10/23/85 **4340** NORC General Social Surveys
Tape, file, and dataset name information was updated to reflect acquisition of 1985 GSS data.

09/24/85 **4170** Rates: Internal Academic
Reflects changes in Rates and Services as of 9/20/85.

09/24/85 **4169** Rates: External Academic
Reflects changes in Rates and Services as of 9/20/85.

09/24/85 **4168** Rates: Ext. Non-Academic
Reflects changes in Rates and Services as of 9/20/85.

09/26/85 **4356** Microcomputing at U of C

09/09/85 **4371** Social Science Data Resources

New in the MVS Notice File

10/31/85 **GRAF1** SPSS Graphics (Test Version)

10/02/85 **SVC15** Computation Center Custom Services Information

10/02/85 **SVC14** Expediting Services Information

11/04/85 **SVC13** I/O Window Information

10/02/85 **SVC12** Demonstration & Development Lab Information

10/02/85 **SVC11** Data Entry Information

11/04/85 **SVC10** Tape Library Information

10/02/85 **SVC9** Terminal & Microcomputer Maintenance

10/02/85 **SVC8** Microcomputer Distribution Center Information

11/04/85 **SVC7** Business Office Information

10/02/85 **SVC6** Social Science Advisor Information

11/04/85 **SVC5** Advice Desk Information

11/04/85 **SVC4** USITE Output Delivery Schedule

10/02/85 **SVC3** USITE Information

11/04/85 **SVC2** Computer Communications Information

10/02/85 **SVC1** General Information Numbers

09/30/85 **XSET1** Abend Conditions (XSET)

09/20/85 **NEWS23** Amdahl 5860 CPU Rates

New in the DEC Notice File

11/04/85 **SVC7** Business Office Information

11/04/85 **SVC5** Advice Desk Information

11/04/85 **SVC13** I/O Window Information

11/04/85 **SVC2** Computer Communications Information

11/04/85 **SVC10** Tape Library Information

11/04/85 **SVC4** USITE Output Delivery Schedule

11/01/85 **GRAF3** SPSS Graphics (Test Version)

10/08/85 **GSS1** NORC General Social Survey 1972-1985

10/03/85 **SVC3** USITE Information

10/03/85 **SVC11** Data Entry Information

10/03/85 **SVC12** Demonstration & Development Lab Information

10/03/85 **SVC1** General Information Numbers

10/03/85 **SVC14** Expediting Services Information

10/03/85 **SVC15** Computation Center Custom Services

10/03/85 **SVC9** Terminal & Microcomputer Maintenance

10/03/85 **SVC8** Microcomputer Distribution Center Information

10/03/85 **SVC6** Social Science Advisor Information

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the IBM 3081D, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of Superwylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

Special notes for September 1985: Because of the Computation Center move to 1155 E. 60th Street, the computers were not operational for some periods of time in September. That should be considered whenever using the following statistics to make comparisons to prior years or months.

MVS was shut down from September 13, 1985 through Wednesday, September 18, 1985. Before the move, MVS was run on an IBM 3081D; after the move, MVS was run on an Amdahl 5860.

Chip was not operational between September 13, 1985 and September 18, 1985.

Dale was not operational between September 3, 1985 and September 30, 1985.

MVS Utilization August - October 1985

Service Provided	IBM 3081/MVS August 1985	IBM 3081/MVS Amdahl 5860/MVS September 1985	Amdahl 5860/MVS October 1985
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	9:43	8:02	4:50
non-setup jobs	6:11	4:27	2:21
tape setup jobs	46:50	41:38	31:49
Total CPU-hours used	382 hrs 0 min	220 hrs 24 min	201 hrs 12 min
Superwylbur sessions	21,449	13,440	23,077
CPU hours	18 hrs 30 min	8 hrs 41 min	8 hrs 36 min
connect hours	16,607 hrs	10,277 hrs	16,500 hrs
average session	46 min	46 min	43 min
average CPU/session	3.10 sec	2.33 sec	1.34 sec
TSO sessions	2,382	1,544	2,970
CPU hours	3 hrs 39 min	1 hrs 58 min	2 hrs 25 min
connect hours	1013 hrs	635 hrs	1359 hrs
average session	26 min	25 min	28 min
average CPU/session	5.53 sec	4.58 sec	2.93 sec
Jobs submitted	55,400	38,303	57,792
Steps executed	105,206	72,856	112,676

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs August - October 1985

Program	Description	Percent	Count
UCFLBL20	FILEBOL	8.51	27137
SASLPA	SAS	8.43	26881
WYLLIST	SUPERWYLBUR List Offline	8.37	26682
SORT	SyncSort	4.75	15142
IEWL	Linkage editor	3.83	12209
IEFBR14	IBM utility - null step	3.78	12056
IEBGENER	IBM file handling utility	3.58	11409
MARKYBOL	Systems utility	2.82	8980
IBMDEC	IBM/DEC link utility	2.69	8590
SUCCESS	Operating Services utility	2.56	8172
FAIL	Operating Services utility	2.52	8027
IDCAMS	VSAM utility for catalog operations	2.51	8004
SPSSX	SPSS Version X	2.12	6752
PGM = *.DD	User defined routines	2.05	6553
BATCH204	Model 204 run in batch	1.66	5285
IELOAA	PL/I compiler	1.58	5052
IGIFORT	Fortran G compiler	1.11	3538
POSTMAN	Bitnet Mail	1.09	3489
IKFCBLOO	COBOL VS compiler	1.03	3295
SCRIPTW	SCRIPT	0.95	3015

CHIP - DECsystem-2060 Utilization August - October 1985

Account Period	August 1985		September 1985		October 1985	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	68.6	4526	54.3	6321	88.9	5029
EVENING	45.1	579	20.3	443	24.8	731
OVERNIGHT	17.3	482	35.8	460	46.0	681
TOTAL	131.0	5587	110.4	7224	159.7	6441

Top Twenty Chip Programs August - October 1985

Program	Description	Percent	Count
OPR	Operator functions	7.50	16321
MM	Electronic mail manager	7.20	15671
SYSDPY	Operator interface with job queues	5.96	12965
WINDOW	Full screen PTYCON	5.86	12766
EXEC	TOPS-20 command processor	5.82	12677
PTYCON	Pseudo-terminal controller	5.78	12586
WATCH	Generates these statistics	5.60	12201
SYSJOB	System job controller	5.60	12200
MMAILR	Network mail daemon	5.59	12163
BITNET	Off-campus electronic mail network	5.53	12032
USAGE	Utility to collect program use data	5.34	11615
IBMSPL	MVS link daemon	5.20	11318
MUSE	Full screen editor	4.37	9510
SHRSRV	File transfer daemon	3.97	8635
1022	Database system	2.61	5681
EMACS	Full screen editor	2.01	4384
SENDER	Local mail daemon	1.78	3884
BATCON	Batch controller	1.61	3507
DEMAND	Data management system	1.54	3359
NCPCAL	Spreadsheet	1.23	2685

DALE - DECsystem-2060 Utilization August - October 1985

Account Period	August 1985		September 1985		October 1985	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	53.7	3453	1.3	29	63.4	2829
EVENING	12.7	570	1.2	30	21.4	628
OVERNIGHT	34.5	2676	2.1	41	28.1	448
TOTAL	100.9	6699	4.6	100	112.9	3905

Top Twenty Dale Programs August - October 1985

Program	Description	Percent	Count
OPR	Operator functions	8.50	10476
WATCH	Generates these statistics	6.58	8113
MMAILR	Network mail daemon	6.54	8064
SYSJOB	System job controller	6.53	8054
SYSDPY	Operator interface with job queues	6.49	7994
SHRSRV	File transfer daemon	6.44	7942
WINDOW	Full screen PTYCON	6.38	7865
IBMSPL	MVS link daemon	6.32	7790
BITNET	Off-campus electronic mail network	6.02	7426
PTYCON	Pseudo-terminal controller	5.79	7133
USAGE	Utility to collect program use data	5.22	6430
MUSE	Full screen editor	4.23	5220
EXEC	TOPS-20 command processor	3.96	4883
MM	Electronic mail manager	2.35	2893
1022	Database system	2.15	2643
DEMAND	Data management system	2.04	2515
SENDER	Local mail daemon	1.95	2406
EMACS	Full-screen editor	1.54	1896
BATCON	Batch Controller	1.50	1844
MINITB	Interactive statistical program	1.45	1793

General Information

Computation Center Administration

Director of the Computation Center	Carolyn D. Autrey-Hunley	962-7690

Associate Director
Operations and Technical Services	John E. Iannantuoni	962-7616

Assistant Directors
Instruction and Research Information Services	Harold C. Bloom	962-7155
Information Technologies and New Services	George R. Bateman	962-7174
Administrative Information Services	David E. Trevvett	962-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	962-7151
Microcomputer Distribution Center	1307 E. 60th St.	962-6086
Multi-media Classroom	Harper 406	962-7153
Usite Terminal Cluster	Wieboldt 310	962-7894

Computer Communications Information

Phones

	300 baud	1200 baud	4800 baud
Modem calls, on campus	5-8880	5-8890	--------
Modem calls, off campus	753-0980	753-0945	--------
IBX-DOB calls	5-3600	5-3600	5-3600

Class codes

Computer	System	300 baud	1200 baud	4800 baud	telenet
Amdahl 5860	MVS	mvs3	mvs12	mvs48	mvstn
DEC-2060 Chip	TOPS-20	chip	chip	chip	chiptn
DEC-2060 Dale	TOPS-20	dale	dale	dale	daletn
Pyramid 90x	Unix	unix	unix	unix	-----

Bitnet mailing addresses

Computer	General address	Example
Amdahl 5860 (MVS)	logonid@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username%chip@uchicago	staff.hal%chip@uchicago
DEC-2060 (Dale)	username%dale@uchicago	staff.hal%dale@uchicago
Pyramid 90x (Sphinx)	person-id%sphinx@uchicago	halb%sphinx@uchicago

Telenet dial-in information

	Nearest phone number	Network address
	800-336-0437 most states	31236A (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)

Quick Reference Phone Directory

Information
General 962-7151
Machine status 962-7626

Accounts
Billing information & records 962-7158
Opening class accounts 962-7159
Opening PCA and regular accounts . . . 962-7158
Refunds 962-7624

Advice and Help
Applications software 962-7624
   Reporting problems
   Suggestions & complaints
Office support systems 962-7174
   Microcomputers
   Terminals
   Word processors
Social Science computing 962-7892
   ICPSR data codebooks
   SAS & SPSS-X consulting

Computer supplies & tapes 962-7159

Custom services
Microcomputer technical services 962-7453
Printing 962-6081
Programming 962-7166

Data entry services 962-7604

Dataset recovery
PCA accounts 962-7159
Other accounts 962-7621

Documentation 962-7452

Magnetic tape services 962-7614

Microcomputers
Appointments for demonstrations 5-3971
   (Off campus phone number) 962-7151
Consultation on equipment 962-7174
Custom technical services 962-7453
Purchase of microcomputers 962-6086

New software requests 962-7166

Production jobs & special handling . . 962-7602

Purchases
Computer supplies & tapes 962-7159
Microcomputers 962-6086
Used equipment 962-7615

Repairs
Macintosh microcomputers 962-7663
Terminals 962-7663

Subscriptions to the Newsletter 962-7159

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

> **Newsletter Subscriptions**
> **University of Chicago**
> **Computation Center**
> **1155 E. 60th Street**
> **Chicago, IL 60637**

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

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Address
_____

Address
_____

City
_____

State   Zip
_____

THE UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Table of Contents

GENERAL NEWS

Academic Year End: Extend Accounts, Plan Summer Data Storage

The Year-end Policy

Many accounts expire at the end of the academic year, June 30, 1986. Owners of these accounts may arrange to extend the account termination date by contacting the Business Office at 962-7159. The account extension will guarantee uninterrupted service — otherwise you may find that the account has been locked and its files have been transferred to tape. The year-end policy is as follows:

PCA accounts belonging to students who are not currently registered for classes (including the summer quarter), or PCA accounts which have expired or are out of funds, receive special handling. All DEC and MVS datasets for these accounts are transferred to tape and removed from disk by the Center. There is no charge to the user for moving the data from disk to tape. There is, however, a charge of $15.00 for having any or all of the datasets restored to disk by Operating Services personnel. That $15.00 cannot be charged to a PCA account.

Non-PCA accounts on the Amdahl or DECs and the new instructional computing accounts beginning with the letters QH are handled differently. Tapes and disk files charged to an expired account continue to accrue charges. It is the user's responsibil-

ity to delete disk datasets and return unneeded tapes. This policy prevents the possible loss of important data.

Both PCA and non-PCA files on the Pyramid are handled as follows. Pyramid directories are first moved to a holding directory for two weeks, then are transferred to tape. Pyramid users may submit their own restoration requests by using the *arcrest* command; the *arclist* command can be used to list files in the archives.

Plan your summer computing needs now so that you don't return in the fall to unexpected storage charges or a locked account.

Tape May Save You Money on Summer Data Storage

Many of you who are leaving for the summer will be wondering whether to store your data on tape. If your disk storage charges are more than $6.00 a month ($24 for the summer), you save money by transferring the data to tape, since tape purchase or rental will cost approximately $20 to $25.

The decision whether the money saved is worth the trouble of putting the data on tape is left to the individual user. To estimate disk storage costs, you should know the following:

On the Amdahl, disk space storage of about 20 tracks (19254 characters/track), for 4 months at 1 cent per track/day will cost about $24. To find out how many tracks you use, do one of three things: 1) Check the VTOC listing at the advice desk at Usite, 2) Run USERVTOC, documented in Memo 4075, or 3) Use the SuperWylbur macro *PUB FINDSN* and request the *full* option. This will include the number of tracks used by the datsets, but can result in quite a large listing of information.

On the DECs or the Pyramid, the unit of storage is the page. To find the number of pages you are currently using on the DEC, use the *INFORMATION DISK* command on each structure where you are storing data. The *VDIR* command can be used to find the number of pages used by each file, but, again, can produce quite a lengthy listing. About 70 DEC pages can be stored for the summer for $26. The Pyramid "page" costs less than the DEC page

— about 140 pages can be stored for the summer for that same amount. The command *du -s* given from the home directory on the Pyramid will list the number of pages in use by that directory plus all directories below it. Or you can issue the *ls -lga* command to learn the number of bytes you have in use. There are 2048 bytes/Pyramid page.

If you decide to buy or rent a tape, see *Magnetic Tape Usage* (R114, TAPEMAN in DOCLIST) for more complete information.

A video tape describing the use of magnetic tapes is also available. Contact the cluster assistant at Usite if you wish to view it.

Programs that are recommended to restore files to the same Center computers are:

> For the Amdahl, MOVEBACK
> For the DECs, DUMPER
> For the Pyramid, TAR.

Checklist for Transporting Data

— *Yvonne Behn*

If you are planning to put data on a computer tape so that you can take it to another computer installation, there are a few things you should check first. Determine what tape characteristics are necessary for compatibility with the new system so that use of the tape in its new environment will go smoothly. A written description of the tape, including the format of the datasets on it, should always accompany the tape reel. Here are a few variables to check before preparing the tape:

1. Are the tape drives 9-track or 7-track?
2. What densities may be used?
3. Should the parity be even or odd?

4. If data is alphanumeric, what coding conventions are used?
   a. EBCDIC (IBM, Amdahl machines)
   b. ASCII (most other machines)
   c. BCD
   d. Column Binary Coded Data
5. What is the label format preferred or required?
   a. IBM Standard Labels (IBM or Amdahl machines - we cannot create DOS labels)
   b. ANSI Standard Labels
   c. Non-labeled
   d. Other
6. What is the maximum acceptable blocksize? (Many computers cannot handle BLKSIZE > 2000)
7. Should the record format be fixed length (most common), variable length, or "stream format?"

Explanations and instructions for formatting tapes are found in the manual "Magnetic Tape Usage," available through DOCLIST as TAPEMAN and in the racks at the terminal clusters (R114).

If exact details on how a tape should be formatted cannot be determined, it is safest to prepare an unlabeled (NL) ASCII tape at 1600 bpi, having fixed length records of length 80 (if possible), and blocksize of about 800.

It is not a good idea to send files in SuperWylbur EDIT format anywhere, since not many other installations have this version of SuperWylbur. It is also quite possible that even another institution having SuperWylbur may define the blocksize differently. Resave SuperWylbur files with the CARD or LRECL = nn parameter before putting them on tape.

Computation Center Holiday Schedules

The facilities and services of the Computation Center will be on the following schedules for the July 4 and Labor Day holidays:

July 4:

Computers	Available
I/O Window	Open
Usite cluster	Open
Usite output delivery	Regular schedule
Advice desk	Closed
Regenstein cluster	Closed
Crerar cluster	Closed except for those eligible for 24-hour access
Staff offices	Closed

Labor Day:

Computers	Down
I/O Window	Closed
Usite cluster	Closed
Output delivery	None
Advice desk	Closed
Regenstein cluster	Closed
Crerar cluster	Closed except for those eligible for 24-hour access
Staff offices	Closed

Dial-up Service at 2400 Baud

— *Ernie Froemel*

Bob Vonderohe, Manager of Communications Services, has announced that users may now access Computation Center computers using modems at 2400 baud. Although people on campus have been able to work at speeds up to 9600 baud using ITE/DOBs (Integrated Terminal Equipment with Data Option Board), people using modems have been limited to 1200 baud.

In order to use 2400 baud, your modem must be able to handle the baud rate and the protocol adopted at the Computation Center. There are many such modems currently on the market. Look for a Hayes-compatible modem operating under the V.22bis protocol.

Also, be sure to reset the baud rate on the terminal or microcomputer that you are using.

The dial-up number for 2400 baud service is 753-0975. People with ITE/DOBs continue to dial 5-3600 for any baud rate.

Since the DEC-2060s and the Pyramid automatically determine baud rates, there is no change in specifying the class code. Continue to specify *chip, dale,* or *unix,* depending on the machine you want to use.

The MVS system, however, requires entering a class code that identifies the baud rate, e.g., *mvs12, mvs48.* Unfortunately, the equipment for *mvs24* has not yet arrived. Nevertheless, you may use TSO and SuperWylbur at any baud rate, including the new dial-up 2400 baud, through the *vtam* class code. See the article on "Using Super-Wylbur Through VTAM" in this *Newsletter.*

ARTFL Project Purchases Kurzweil Machine

— Kent Wright

The ARTFL Project (American and French Research on the Treasury of the French Language) has recently purchased a Kurzweil data entry machine. The Kurzweil is probably the most versatile Optical Character Recognition device available today. It can be trained to scan a wide variety of typestyles and even different alphabets; once training for a specific typestyle has occurred, documents can be converted into computer-compatible form at the rate of between 20 and 50 characters per second. Documents entered in this fashion can then be transmitted to various destinations within the University's computer systems.

The Kurzweil machine was acquired with the assistance of the Humanities Division. One purpose is to supply the ARTFL Project with an efficient means for adding texts to its own database. A second purpose is to provide an inexpensive data entry service for the University community at large. ARTFL expects to have the system operational and to make a rate schedule available during June. The service will be administered by Kent Wright, and he can be contacted for further information at 962-8488.

U of C Joins NSFnet Today; Tomorrow the World

— Ron Rusnak

The National Science Foundation Network, NSFnet, is intended to provide both high-speed access to supercomputers and communication between sci-

entists in all disciplines throughout the nation. Although initially designed for supercomputer users to gain access to supercomputers and to communicate with each other, NSFnet is expected to become a general purpose computer communications network for the entire academic research community and associated industrial researchers.

The development of NSFnet is part of the NSF supercomputer initiative. This program resulted from the recent growing concern within the research community that academic research has been severely constrained by the lack of access to advanced computing facilities.

In response to these concerns, NSF initiated two programs: the supercomputer centers program to provide supercomputer cycles, and the networking program to build a national supercomputer access network, NSFnet.

The plan to implement the NSFnet is two-phased. Phase 1 will connect supercomputer users to the supercomputer centers and to each other. Phase 2 will provide a general high-speed network with speeds of 1.5 megabits per second or greater.

Phase 1 will be implemented by constructing a "backbone" network and connecting various campus and regional networks to it. Therefore, NSFnet will actually be a network of networks rather than a separate new computer network.

The initial implementation will base the network on a common set of protocols known as TCP/IP. TCP/IP was developed as part of research funded by the Defense Advanced Research Project Agency, DARPA. There exists today a network connecting some 1700 computers known as ARPAnet using these protocols. A migration to the emerging International Standards Organization (ISO) open systems interconnection networking protocol standards will be undertaken as they become available.

The strategy for NSFnet is to begin by connecting the six NSF-sponsored supercomputer centers with TCP/IP based routers and terrestrial 56 kilobit circuits. The NSFnet backbone configuration is shown at the end of this article.

The University of Chicago has elected to gain initial

access to NSFnet via another network sponsored by the University Consortium for Atmospheric Research (UCAR). This network, USAN, will consist of the National Center for Atmospheric Research (NCAR), the University of Illinois, the University of Maryland, the University of Michigan, University of Miami, Woods Hole, and the University of Wisconsin. As of this writing, only NCAR and the U of I are connected.

These nodes will connect others to USAN and hence to NSFnet. The University of Chicago falls into this category. We are currently connected via a 56 kilobits per second terrestrial telephone circuit to the University of Illinois. We plan to upgrade that connection to a 224 kilobits per second satellite link. Other sites that will be connected to the University of Illinois are Northwestern University and Indiana University.

At the time of this article, the only computer on campus which has direct access to NSFnet is odd-job, the VAX/780 at Astrophysics. As soon as appropriate gateway hardware and software is available, machines which have access to the University ethernet will be able to take advantage of NSFnet.
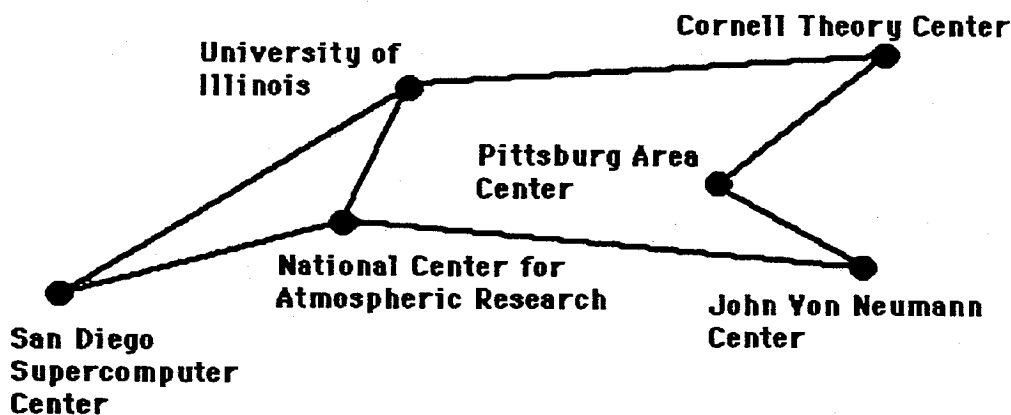
MVS

Using SuperWylbur Through VTAM

— Ernie Froemel

When you issue a *show count* command in Super-Wylbur, you'll see a message like the following:

54 ACTIVE USERS, 48 ON MILTEN, 6 ON VTAM

The majority of users are shown on MILTEN, the standard start-stop access to SuperWylbur. However, what is VTAM and who can use it?

VTAM is an acronym for Virtual Telecommunications Access Method. It is an IBM software product that allows full screen access to a variety of products, including the new SuperWylbur, through a common communications method. Although designed for the IBM 3270 family of terminals, VTAM is also available through the IBM 7171 protocol converters which make ASCII terminals behave like IBM 3270s. It is the emulation through the 7171s that provides both the advantages and disadvantages of using VTAM SuperWylbur. Let's look at these pros and cons.

Faster baud rates. MILTEN allows communications speeds of 300, 1200, and 4800 baud through the class codes mvs3, mvs12, and mvs48. VTAM speeds include 300, 600, 1200, 2400, 4800, 9600, or 19,200 baud. Of course, your terminal and modem must be able to operate at whatever speed you select. Note that the new 2400 baud dial-up service is only available to SuperWylbur through VTAM. See the article, "Dial-up Service at 2400 Baud" earlier in this *Newsletter*.

Full duplex. There are actually two advantages in using full duplex through VTAM as opposed to the half duplex through MILTEN. First, passwords are not displayed on the screen when logging on. This helps keep your account more secure by preventing an onlooker from learning your password. Secondly, full duplex allows you to type ahead of the prompts. That is, you end a line with a carriage return as usual, but you no longer have to wait for SuperWylbur's prompt to continue typing.

Full screen features. The use of arrow keys and character insert mode is supported through VTAM. In addition, a rudimentary full screen editor is available. That editor is not nearly as powerful as the full screen editors on the DEC or Pyramid. But, it does allow modifying a screenful at a time rather than a line at a time.

Difficulties in using SuperWylbur through VTAM arise from both the expectation that only IBM 3270 terminals are being used and the emulation that makes an ASCII terminal look like a 3270.

Emulation difficulties. Function keys, numeric keypads, arrow keys, or special purpose keys are located in different places for different ASCII terminals. The IBM 7171 is programmed to translate the codes transmitted by those keys into 3270 codes. However, you need to know which keys on your particular terminal perform which 3270 functions. Appendix B to *The 7171 Reference Manual and Programming Guide* contains keyboard layouts and has been filed under R524 in the Usite reference racks.

It is particularly important to know that the *break* or *attention* key does not work through VTAM. Depending on the terminal, pressing that key could break your connection, lock your terminal session, or have no effect. If you should happen to hit the *break* key and your terminal does become locked, you can reset it by holding down the *Ctrl* key and typing *r*. If you are working on a Hewlett Packard 2648, just press the *Terminal Reset* key to unlock your terminal. In 3270 jargon, a break is performed by pressing the PA1 key, which is identified in the keyboard layouts. The PA1 key for some of the

common ASCII terminals on campus is shown below. A key is defined by square brackets and in some cases two keys are needed to send a break signal.

Terminal	Break key (PA1)
Concept 108	[F14]
HP 2648	[ESC] [,]
Macintosh Kermit (emulates VT102)	[option] [,]
Macintosh MacTerminal (emulates VT100)	[PF4]
Teleray 1061	[F1]
Teleray 4041	[F13]
Televideo 950	[funct] [,]
VT100	[PF4]
Wyse 50	[F14]

The mappings become more complicated when you are using a microcomputer to emulate a terminal which then emulates a 3270! In many cases, the software used by the microcomputer is not a perfect emulation and may not work properly through VTAM.

3270 functional limitations. Because of the way the 3270 family of terminals work, there are limitations on using tabs, COLLECTing long lines of text, LISTing files, and using special terminal features like page memory and 132-column display.

Tab control. Currently, the SuperWylbur command, set tabs, and the macro, TABSET, do not work under VTAM. On some terminals you may set column tabs at the cursor position or move the cursor to a column tab position. See the keyboard layout for your terminal to determine if column tabs, as opposed to field tabs, may be emulated.

COLLECTing long lines of text. When COLLECTing SuperWylbur text through MILTEN, as you approach the right side of your screen, the cursor will "wrap", that is, go down one line and to the far left of the screen. Everything typed before a carriage return is treated as one line, up to a maximum of 255 characters. COLLECTing on VTAM, however, the line will not automatically wrap. You must force a wrap by pressing the PA2 key before reaching the far right of the screen.

LISTing files. In VTAM, the display of text is halted

at the end of a screenful. Pressing carriage return continues the listing.

Special terminal features. Terminal page memory and 132-column display are two special terminal features that cannot be used under VTAM. However, the Computation Center is examining a way to allow 132-column display.

For some people, the faster transmission speeds and full duplex features outweigh the negative aspects of using SuperWylbur through VTAM. Try VTAM and see if you agree.

To use VTAM, set your terminal for full duplex, one stop bit, one parity bit, even parity, and 7-bit ASCII. The baud rate for your terminal and modem should be set properly and the logon sequence would look like the following:

ENTER CLASS vtam [cr]
7171 VTAM SERVICES
CONNECTED
[cr]
ENTER TERMINAL TYPE: (typing ? lists valid terminal types)

You are then presented with a logon screen which is self-explanatory. Your cursor is placed where you are to enter the system you wish to use. For SuperWylbur, enter "wyl".

SYSTEM = = = = = = = = = = > wyl

The rest of the logon process is similar to standard MILTEN logon.
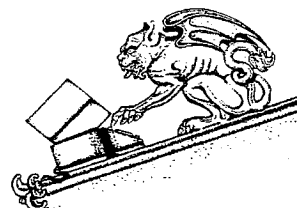
Script 85.1 To Become Production Version

— Melinda Shore

Script version 85.1 will be replacing version 83.1 on June 6. This version has a number of new features, including enhanced GML support, the addition of built-in functions (such as index, uppercase, length, absolute value, etc.), some new set symbols, and more intelligent control word parsing. Also, some control words are now considered archaic. Warning messages will be generated if these are used, but Script will still "understand" them. Among these archaic control words are .HE, .FI, .NF, .NJ, .SI and .UL.

Treatise is available with this new version, as are SYSPUB and SYSPAPER. Waterloo is not supporting either SYSPUB or SYSPAPER, however, and we strongly recommend that users not use them. GML provides excellent, easy-to-use support for high-level formatting, and it is supported by Waterloo. For more information on GML, see the *GML User's Guide*.

Manuals for the new version of Script are available through DOCLIST as follows:

> *Script 85.1 User's Guide* (SCR851UG or R179A)
> *Script 85.1 Reference Manual* (SCR851RF or R179B)
> *Script 85.1 GML User's Guide* (SCR851GU or R179C)

If there are any problems with this new version of Script, please contact the Program Advisor.

Old Version of Treatise Will Soon Disappear

— Melinda Shore

The "old" version of Treatise will not be available after June 6. Please note that this is two weeks after the Spring Quarter dissertation deadline. If you are using this version and plan to continue using Treatise after June 6, start converting your document soon. Differences between the old and new versions of Treatise are described in Memo 4373 and Notice File entry TRT6.

Plotting on the Mainframe Printers

— Chuck Hodge

EPIC, Electronic Printer Image Construction, has been expanded to support graphics calls from Fortran, PLI, and SAS. Execution procedures are now available for the printing of graphic output on the mainframe printers from any of these sources.

As a software package, EPIC interfaces with the user's graphics applications to construct images that are formatted for the mainframe printers. The mainframe printers offer inexpensive draft black and white copy of graphic ouput.

The cover of the Spring 1986 *Newsletter* was an example of EPIC used with SAS/GRAPH. Shown below is a sample of JCL for that procedure, as well as JCL samples and resulting graphics for the newly-developed Fortran and PLI procedures.

SAS/GRAPH

```
//jobname JOB project,name,REGION = 2048K
/*JOBPARM ROOM = delivery,FORMS = form
//S1 EXEC SAS
//SYSIN DD *
     GOPTIONS DEVICE = EPIC;
     Follow with standard SAS job
```

FORTRAN

```
//jobname JOB project,name,REGION = 256K
/*JOBPARM ROOM = delivery
/*
//FORT  EXEC  FORTXCLG,
//     USERLIB = 'SYS2.EPIC.VER31.LOAD'
//FORT.SYSIN  DD *
C    PROGRAM ROSE.FOR --  FOUR LEAVED ROSE
C
C   R = A*COS(2*THETA) & R = A*SIN(2*THETA)
C
     DIMENSION X(700),Y(700),V(700),W(700)
     DATA PI / 3.1415927 /
C
     CALL PLOTS(0, 0, 10)
C
     A = 5
     DELTA = .01
     IDELT = 2 * PI / DELTA
C
     DO 1 I = 1,1000
       THETA = DELTA * I
       IF ( THETA .GT. 2 * PI) GO TO 2
       R = A * COS ( 2 * THETA)
       Y(I) = R * COS (THETA)
       X(I) = R * SIN (THETA)
       RR = A * SIN (2 * THETA)
       V(I) = RR * COS (THETA)
       W(I) = RR * SIN (THETA)
1    CONTINUE
C
C    DO PLOT
C
2    CONTINUE
C
     CALL PLOT(1., 1., -3)
     CALL SCALE(X, 6.5, IDELT, 1)
     CALL SCALE(Y, 6.5, IDELT, 1)
C
     V(IDELT + 1) = X(IDELT + 1)
     W(IDELT + 1) = Y(IDELT + 1)
     V(IDELT + 2) = X(IDELT + 2)
     W(IDELT + 2) = Y(IDELT + 2)
C
     CALL LINE(X, Y, IDELT, 1, 0, 0)
     CALL LINE(V, W, IDELT, 1, 0, 0)
     CALL PLOT(0.,0.,999)
     STOP
     END
```

```
//GO.EPICVECT DD  DSN = &&VECTORS,
//     SPACE = (6144,(50,100)),
//     UNIT = SYSDA,DISP = (MOD,PASS)
//GO.FT95F001 DD DISP = SHR,
//     DSN = SYS2.XEROX.PROCUTIL(EPIC31I1)
//STEP2 EXEC X97PLOT,VECTORS = '&&VECTORS'
```
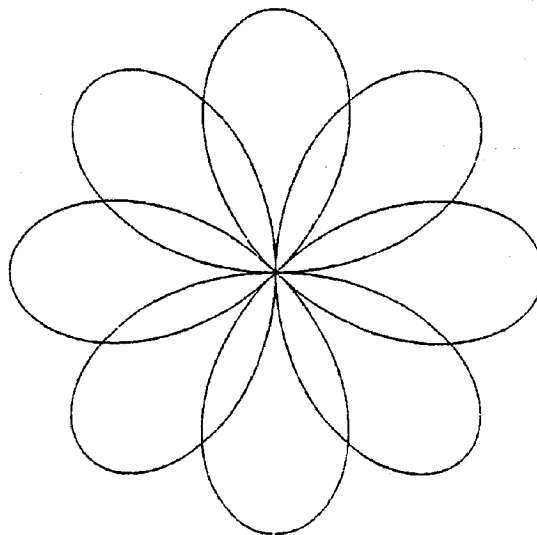

PLI

```
//jobname JOB project,name,REGION = 500K
/*JOBPARM ROOM = delivery
//PLIX  EXEC  PLIXCLG,USERLIB = 'SYS2.EPIC.VER31.LOAD'
//PLIX.SYSIN  DD *
 TRIANG: PROC OPTIONS(MAIN) REORDER;

     DCL BASE FLOAT DEC(15),
         HT  FLOAT DEC(15),
         ORDER BIN FIXED(31),
         (X_OFF, Y_OFF) FLOAT;

     DCL PLOTS ENTRY (BIN FIXED (31),
             BIN FIXED (31),
             BIN FIXED (31)) OPTIONS(FORTRAN),
        PLOT  ENTRY (FLOAT DEC (6),
             FLOAT DEC (6),
             BIN FIXED (31)) OPTIONS(FORTRAN);


     GET LIST (ORDER, BASE, HT, X_OFF, Y_OFF);
     PUT SKIP EDIT ('ORDER = ', ORDER,
```

```
                'BASE  = ', BASE,
                'HT    = ', HT,
                'X_OFF = ', X_OFF, 'Y_OFF = ', Y_OFF)
                (A, F(4), SKIP, A, F(7,2), SKIP,
                 A, F(7,2), X(5), A, F(7,2));

        CALL PLOTS (0, 0, 10);
        /* DRAW OUTER TRIANGLE & ESTABLISH ORIGIN */
        CALL PLOT (X_OFF, Y_OFF, -3);
        CALL PLOT (BASE, 0, 2);
        CALL PLOT (BASE/2, HT, 2);
        CALL PLOT (0, 0, 2);

        CALL TRIANGS (BASE/2, 0, BASE/2, HT/2, ORDER-1);

        /* CLOSE UP PLOT */
        CALL PLOT (0., 0., 999);
        PUT SKIP(3) LIST ('THAT''S ALL, FOLKS.');

TRIANGS: PROC (X, Y, BASE, HT, ORDER) RECURSIVE;
        DCL (X, Y, BASE, HT) FLOAT DEC(15),
            ORDER  BIN FIXED(31);

        /* DRAW TRIANGLE */
        CALL PLOT (X, Y, 3);
        CALL PLOT (X + BASE/2, Y + HT, 2);
        CALL PLOT (X-BASE/2, Y + HT, 2);
        CALL PLOT (X, Y, 2);
        IF ORDER > 0 THEN DO;
            CALL TRIANGS (X + BASE/2, Y, BASE/2, HT/2,
                ORDER-1);
            CALL TRIANGS (X-BASE/2, Y, BASE/2, HT/2,
                ORDER-1);
            CALL TRIANGS (X, Y + HT, BASE/2, HT/2, ORDER-1);
        END;
        END TRIANGS;

 END TRIANG;
//LKED.USERLIB DD DSN = SYS2.FORTLIB,DISP = SHR
//     DD DSN = SYS1.FORTLIB,DISP = SHR
//GO.FT95F001  DD DISP = SHR,
//     DSN = SYS2.XEROX.PROCUTIL(EPIC31I1)
//GO.EPICVECT DD  DSN = &&VECTORS,
//     SPACE = (6144,(50,100)),
//     UNIT = SYSDA,DISP = (MOD,PASS)
//FT06F001 DD SYSOUT = A
//GO.SYSIN DD *
7 5 10 1.75 0.5
/*
//STEP2    EXEC X97PLOT,VECTORS = '&&VECTORS'
```
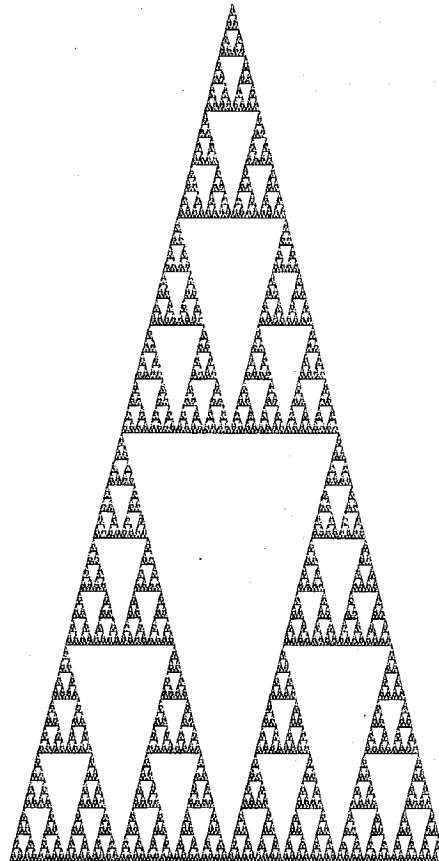
Bitnet Revisited

— Don Goldhamer

Access to Bitnet has recently been improved for SuperWylbur users with the addition of the TO and TELL commands. These commands allow interactive communication between your terminal and any other user who is logged onto Bitnet (see the online help files for further information).

In addition to such interactive conversations, these commands give you access to some powerful services by addressing requests (of a very specific form) to service machines attached to Bitnet. The kinds of services available from these "servers" relate to:

- descriptions of the services and instructions on how to use them
- interest-groups on many topics (along with mailing-lists of people who have subscribed to the group, archives of past correspondence within the group, and mechanisms for subscribing)
- conferencing systems (allowing multi-person discussions)
- databases of specialized information, such as use of the Apple Macintosh microcomputer
- names and network mail addresses for network users.

During the summer, the Computation Center will review these services, copy descriptions and instructions for the most useful services onto our campus computer system, and subscribe to some of the interest-groups (making the communications available locally). The Center will also be working with other network sites to make a name-service available to University of Chicago users, so that your mail address can be found by friends from other sites.

SPSS Graphics Update

— Eric Nelson

SPSS Graphics update version 1.1 has been installed, and is available in TSO using the SPSSGRAF command. This version contains two major additions and a number of enhancements.

The main additions are a new chart type, 3-D block diagrams, and a major modification to the bar chart procedure which now includes both 3-D and drop shadow options. Enhancements to axis labelling features include automatic labelling for calendar-like axis labels (e.g., days of the week, months, etc.). Extensions to the mapping procedures include symbol and line maps, and a number of new projection methods.

Documentation for the update can be found in the update report *SPSS Graphics: Release 1.1 Update* which is in the documentation rack at Usite (reference number R1N).

Additionally, some of the difficulties with VTAM access have been resolved, and SPSS Graphics can now be accessed through entry class VTAM. The rest of this article will describe how to use SPSS Graphics through the 7171 protocol converter (VTAM).

When you use SPSS Graphics through VTAM, you will be able to create graphics datasets and create files for graphics terminals and plotters, but you will not be able to view the output at a terminal. The current version of SPSS Graphics does not support the display of graphics output through any type of protocol converter.

Terminal Setup for VTAM access

In order to access VTAM you need to configure your terminal with the appropriate communications parameters. (For general information on communication through VTAM, see the *Newsletter* article

"Full Screen Editing for MVS" in the Fall, 1985 issue, pages 20-22.) Below are examples of how to set up TVI950 and HP2648 terminals.

TVI950 & TVI950 Retrofit Graphics. A previous *Newsletter* article on SPSS Graphics mentioned problems with the operation of function keys on TVI950 terminals. Under VTAM these problems do not exist, so if you are using a TVI950 terminal you should log onto TSO through VTAM.

A standard TVI950 terminal can be configured to communicate with VTAM through a brief series of keystrokes. The table below indicates how to configure your terminal for a given baud rate:

BAUD	Keystroke sequences
1200	[shift][esc]{ 8031 [CR]
2400	[shift][esc]{ :031 [CR]
4800	[shift][esc]{ <031 [CR]
9600	[shift][esc]{ 0031 [CR]

NOTE: [shift] & [esc] are held down simultaneously.

A TVI950 with the retrofit graphics board cannot do graphics through VTAM, but can operate as an alphanumeric input terminal. To configure these graphics terminals, give the following commands before hitting RETURN for the ENTER CLASS prompt:

!BAU 4800
(or whatever baud rate you wish to work at)
!NBI 7
!PAR EVEN
!SBI 1
!RSS NO
!ECH REM

Then type [ctrl][b] to display the status line at the bottom of the terminal. Move the cursor to TRAN using the [—>] key, and hit RETURN. Your terminal will now operate as a standard TVI950.

Note: On the TVI950 terminals under VTAM, the BREAK key does not work. You should use instead the [funct][,] key sequence described in the "Using SuperWylbur Through VTAM" article found in this *Newsletter.*

HP 2648. On an HP2648 terminal, you need only change the parity switch to EVEN and the duplex switch to FULL in order to communicate through VTAM. However, remapping of the keys by the 7171 protocol converter means that the function keys *f1* to *f8* do not work, and you will have to substitute [esc]1 to [esc]8 for the numerically corresponding function keys. As with the TVI950 terminals, the [BREAK] key is replaced; use the key sequence [esc][,].

Using SPSS Graphics through VTAM

Once logged on to TSO, SPSS Graphics can be invoked with the SPSSGRAF command. SPSS Graphics will then ask for a terminal type. You must define your terminal type as an IBM 3270, **not** as the type of terminal you are using. This is because the 7171 protocol converter expects characters coming from the computer to be for an IBM 3270 series terminal; the converter then changes those characters into what your terminal expects. Therefore, the characters which SPSS Graphics sends to the converter must be for a 3270. If you have not defined your terminal to SPSS Graphics as a 3270, you will get a blanked-out screen and the following error message:

IKT00405I SCREEN ERASURE CAUSED BY ERROR
          RECOVERY PROCEDURE

It will then be necessary to turn off the terminal and wait a few minutes for the system to drop your session before you restart. (If you try to reconnect to your session, you will be stuck exactly where you were.)

Once the terminal is correctly defined, there should be no problem using the program in the normal manner.

TOPS-20
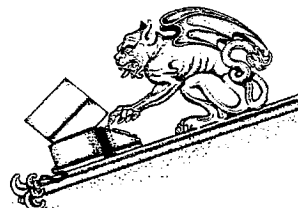
One DEC-20 to Disappear This Summer

— Hal Bloom

Because usage of the Computation Center's two DEC-20 computers has declined to the point that it can be supported on one DEC-20, the Center plans to remove one of the DECs over the summer. We will retain the current number of RP07 disk drives so that there will be adequate disk storage for customers who will continue using the DEC-20.

As Chip is more heavily used than Dale, and also is the computer which is connected to the campus ethernet, it will be retained. Some software for the DEC-20s is coming up for renewal over the summer. As the contracts become due, the Center will renew software only for Chip, and will eliminate it from Dale. While the plans for making the actual migration from two DEC-20s to one are still being developed, the goal is to move files and disk volumes in such a way that the adverse impact on users will be minimized. Chip users should see no changes, while Dale users may have to make some changes in procedures or programs which make explicit reference to "dale:".

Schedule for DEC-20 Removal on Campus

— Hal Bloom

Representatives of the Graduate School of Business and the Computation Center recently met with Robert Graves, Associate Provost for Computing and Information Systems, to discuss the schedule for the phasing out of DEC-20s on campus. The GSB will be removing one of its DEC-20s by July of this year, and plans to remove its other DEC-20 by January, 1988 (although they may remove it as early as the summer of 1987). At that point, the only DEC-20 on campus will be at the Computation Center. The Center plans to remove this last DEC-20 by July, 1989. If suitable alternatives for migration of current use can be provided, this last DEC-20 might be removed earlier, but will definitely remain through July, 1988.

During the coming year, the Center will investigate migration alternatives for current DEC-20 users. Data collected to date provides us a profile of current overall usage patterns, and also with usage patterns of particular departments. We encourage our DEC-20 users to contact us regarding their current and future needs so that we can better plan to meet them. Comments and questions should be addressed to Hal Bloom at 962-7155.

TOPS-20 Print Command

— *Kay Sandacz*

The TOPS-20 print command now takes advantage of some Xerox 9700 printer options. From the DEC, users can request the most common print formats or specify a delivery code for output without learning the ways of MVS JCL or providing an MVS password.

These facilities are provided through parameters given with the print command. For example, the command

    @print log.txt /room:osbn /forms:elite

will result in the file named LOG.TXT being printed in the elite font in portrait orientation in duplex on three-hole paper and delivered to OSBN. The other available options for forms are TWOUP, which prints two landscape page images on each side of a portrait sheet of three-hole paper; and NORMAL, which prints in landscape on both sides of three-hole paper. For information on other parameters to the print command, type 'help print' at the TOPS-20 prompt.

It is also possible to set default values for the print command. If you want to print several files, all sent to HOLD, give this command first:

    set default print /room:hold

Including that command in your *login.cmd* file will insure that output from any print command will be sent to HOLD.

These print jobs are still charged to your DEC directory in terms of printer pages. Output sent to OSBN or USIT should be found in the P bin, since these jobs run under the MVS logon-id DECPRNT.

FORTRAN 10 on the DEC-20

— *Joyce Weil*

A new version of Fortran which supports Fortran-77 structured programming statements and extended addressing will soon be installed on the Computation Center's DEC-20. (Extended addressing is used for large-code applications.) Support for industry-compatible unlabeled tapes is provided. Two new commands have been added:

    INQUIRE — returns information about files in use (or about to be used) by the program

    IMPLICIT NONE — overrides all implicit default declarations.

An extensive set of bit handling routines has been added. These functions are (all arguments and results are integers):

    IAND (k1,k2) — bit-wise logical AND of integers k1 and k2

    IOR (k1,k2) — logical inclusive OR of k1 and k2

    IEOR (k1,k2) — logical exclusive OR of k1 and k2

    NOT (k1) — logical complement of k1

    ISHFT (k1,k2) — logical shift of k1 by k2 bits. If k2 is positive, shift is to left; if k2 is negative, shift is to right; vacated positions are filled by zeros.

    ISHFTC (k1,k2,k3) — logical rotation by k2 of the rightmost k3 bits of k1; direction of shift is controlled by the sign of k2.

IBITS (k1,k2,k3) — bits k2 through
    k2 + k3-1 of k1 are right justified in
    the result

IBSET (k1,k2,k3) — the result is the integer
    value of k1 with bits k2 through
    k2 + k3-1 set to ones

IBCLR (k1,k2,k3) — same as IBSET but
    bits are set to zeros

BTEST (k1,k2) — logical result is .TRUE. if
    bit k2 of k1 is a 1, .FALSE. if it is 0.

In addition to these functions there is one subroutine:

MVBITS (m,k,len,n,j) — bits k through
    k + len-1 of variable m are moved to
    bit positions j through j + len-1 of
    variable n.

As with previous versions of DEC Fortran, version 10 incorporates several extensions to standard Fortran. These include ENCODE, DECODE, REREAD, ACCEPT, TYPE, INCLUDE and a number of extra format editing types. Character, complex, octal and hexidecimal constants are supported.

PYRAMID/UNIX

Putting Sphinx Files Onto Tape

— *Jim Lichtenstein*

As was pointed out in the article "Academic Year End: Extend Accounts, Plan Summer Data Storage," you may wish to move your files from the sphinx online disk packs to tape for the summer quarter. This way you will avoid disk charges during the time when you are out of town or simply not intending to use the computer. There are several utilities on Unix which can be used to do this, the primary ones being:

> tar — a utility for archiving files to tape, and
>
> dd — a utility for converting and copying a
>   file, used for moving files to other
>   systems.

The manual pages on each of these commands will give you complete information on their use. Both of these commands are quite simple to use.

For example, if you wish to save all the files in all directories under your home directory, buy a tape, logon to Unix and give the following command:

> tapemount -w mytape

where "mytape" is the Volser of your tape.

When you get a message on your terminal from the operator telling you that your tape has been moun-

ted, give the following command:

> tar c /u1/person-id

where "person-id" is your Person-ID.

When the tar command has completed, enter:

> ^ D (control-D)

at the terminal to dismount the tape.

Tar usually works silently, but you can specify options which will make it quite verbose.

Printing from the Pyramid

— *Melinda Shore*

One of the areas in which Unix systems vary greatly is mechanisms for generating hardcopy. The software that is part of "standard" Unix makes certain assumptions about the printer that may not be true at every site, and printer vendors often provide their own software to take advantage of special features of their printers.

The Computation Center has a Talaris 1200 printer available for printing from our Pyramid. The Talaris is essentially a Xerox 2700 (like the one at Usite) with a Talaris controller. It prints 12 pages per minute and uses QUIC, from Quality Microsystems (QMS), as its page description language. The software to drive the printer was also written by QMS.

The basic command for printing is qprint(1). Qprint first pipes its input through pr(1), adding headers and doing other simple formatting, before submitting your print request. Qprint accepts pr options. Another basic command for printing is qlpr (no manual page available). Qlpr does not pipe its output through pr, so there are no headers and no top or bottom margins on each page.

Plot(5) format files can be printed on the Talaris using the qplot (no manual page available) command. Users can have the statistical/graphics package S generate files in this format by specifying unixplot as the output driver.

Typesetting emulation is supported by the qtroff(1) command. Qtroff behaves very much like conventional troff. However, troff will not go directly to the printer, and should not be used unless you want to generate C/A/T format files. We also have the standard macros (-man, -me, and -ms), and we strongly recommend that people using qtroff take advantage of these. Eqn and tbl are available for equation and table formatting.
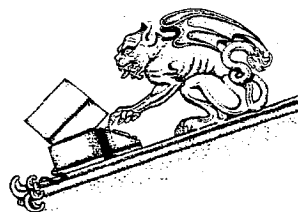
MICROCOMPUTING

IBM-XTs Loaned to the University

— *Ernie Froemel*

IBM has loaned thirty IBM-XT microcomputers to the University of Chicago for use by students, faculty and staff. It is hoped that experience over the loan period will help focus University involvement in the microcomputer area.

The IBM-XTs are configured as follows: 512 KByte memory, 10 MByte fixed disk, double-sided diskette drive, math co-processor, and color graphics monitor. Software installed on all machines is IBM PC DOS 3.0, WordStar for word processing, and the Lotus 1-2-3 spreadsheet.

Ten of these loaned microcomputers have been made available at the Usite terminal cluster (Wieboldt 310). Five of these have IBM Proprinters attached, and efforts are underway to provide communications to the Computation Center mainframe computers through Kermit.

Anyone with valid University identification may use these microcomputers free of charge. By leaving your identification card as security, you may borrow documentation for PC DOS, WordStar, or Lotus from the cluster assistant at Usite. However, you must provide your own diskettes if you plan to save your work.

The remaining twenty IBM-XTs have been installed in the multi-media classroom located at Harper 406.

IBM Proprinters are attached to ten. In addition, the dBASE III database management system is available on these microcomputers.

The microcomputers in the classroom are meant to be used for "hands-on" seminars. As such, they are not available for use by individuals. Faculty members wishing to use this classroom for such seminars may contact Ernie Froemel at 962-7452 for further information.

Bulletin Boards for Microcomputer Users

— *Yvonne Behn*

For microcomputer users and others interested in microcomputers, numerous bulletin boards and public information files can be found by logging on to either the Pyramid or on to Chip.

On the Pyramid, the bulletin boards are part of the net news. The entries can originate from anywhere on USENET, and the bulletin boards are generally kept relevant and up-to-date. The entries are organized into newsgroups according to specific topics. To get a listing of all of the various newsgroups, type *newsgroups* at the Pyramid's prompt (%). Some of the more informative microcomputer newsgroups are:

> net.micro
> net.micro.pc
> net.micro.mac
> mod.computers.ibm-pc
> mod.mac

The *net* groups are USENET bulletin board newsgroups circulated around the entire USENET; the *mod* groups are moderated bulletin boards or monitored mailing lists. For detailed instructions on how to read the mail in these various newsgroups, see

the man pages on *readnews* or *rn*, two different programs for accessing USENET.

Two groups which contain publicly available executable Macintosh programs are *net.sources.mac* and *mod.mac.sources.*

On Chip, there are also bulletin boards and directories dedicated to microcomputer information. Much of the information in the bulletin boards comes directly from the Pyramid; however, the files on Chip are generally not monitored as closely or kept quite as current as those on the Pyramid. Because of limited disk space and heavy usage, the messages are periodically cleaned out and archived. The bulletin boards *INFO-MAC*, *APPLETALK* and *KERMIT* usually are up-to-date and contain useful information. To access any of the bulletin boards on Chip, get into MM and type *BBOARD* followed by the name of the bulletin board. For example:

MM > BBOARD INFO-MAC

The directories CS2:<micro.mac> and CS2:<micro.cpm> contain files such as games, utilities and source codes which can be downloaded to the appropriate micros. To see a listing of the files within the directories, type

@DIR CS2:<micro.mac> or
@DIR CS2:<micro.cpm>

SAS/STAT Has Arrived

SAS/STAT (Statistics), the second module of SAS for the PC, has arrived.

SAS/STAT includes the procedures ANOVA, DISCRIM, FACTOR, FREQ, GLM, NPAR1WAY, REG, SCORE and TTEST. Our license with SAS states that the products can be used by University faculty, staff and students on microcomputers owned by the University. Unfortunately, the license does not allow the sale of SAS products to individuals, or use of the products by students at home.

The cost for SAS/STAT is $40. For information on obtaining it, contact Don Goldhamer, Manager of Applications Systems, at 962-7166.

SAS Micro-to-Mainframe Link

— Yvonne Behn

One of the features of SAS for Personal Computers is the micro-to-mainframe link which allows you to use mainframe capabilities when you need them under PC DOS. This link lets you use your PC as a development system and choose either local (PC) or remote (mainframe) processing for your SAS programs. The micro-to-mainframe link can also be used as an easy way to transfer SAS datasets between systems.

The SAS micro-to-mainframe link does not establish the actual communication between the PC and the mainframe; that process must be done with a communications software package such as Kermit. The SAS link does not recognize protocol converters; therefore, you cannot logon to TSO through *vtam*. You must logon through one of the *mvs* class codes. Once communication has been established, the link acts as a connection between the local PC SAS system and the remote mainframe SAS system.

The relevant link commands are:

SIGNON — establishes communications between PC SAS and mainframe SAS (does NOT imply LOGON)

RSUBMIT — submits lines typed into PC SAS to the remote system for execution

PROC DOWNLOAD — when RSUBMITted will download a dataset

PROC UPLOAD — when SUBMITted will upload a dataset

SIGNOFF — breaks the communication link between PC SAS and mainframe SAS (does NOT imply LOGOFF).

SIGNON

The link is established with the SIGNON command followed by the complete name of an rlink file enclosed within single quotation marks. The rlink file contains a list of commands that tell the link how to start up the remote session. An rlink file called *tso.scr* is included in the U of C SAS PC package and includes the commands to start up a TSO SAS session. It is possible to eliminate the necessity of typing the rlink filename by copying the *autoexec.sas* file into your own directory (instructions for this are in the SAS-PC installation guide). The *autoexec.sas* file contains the name of the rlink file, so the SIGNON and SIGNOFF commands can be used without the rlink filename qualifier. It is also possible to write your own rlink file; details on how to do this are in the *SAS Technical Report P-144: Writing RLINK Files for the Micro-to-Mainframe Link* (available from SAS Institute Inc., Box 8000, Cary, North Carolina 27511-8000). SIGNON does not log you onto the remote system unless your rlink file includes commands to do that. The rlink file *tso.scr* does not include the necessary commands for LOGON; you would have to write your own rlink file to include those commands.

RSUBMIT, PROC DOWNLOAD, and PROC UPLOAD

Once the link has been established, you can work between the PC and the mainframe. The RSUBMIT command allows you to send all lines in the PGM window (a.k.a. EDITOR window) on the PC to the remote system for execution. PROC DOWNLOAD, which must be RSUBMITted, will copy a SAS dataset from the remote system down to the local system; PROC UPLOAD works in the other direction to transfer datasets from the local system up to the remote system. These procedures allow you to work on whichever system is most efficient for the work at hand.

SIGNOFF

To terminate the link, the SIGNOFF command is used. If the *autoexec.sas* file has been copied, nothing more need be typed; if the *autoexec.sas* file has not been copied, then the name of the rlink file enclosed in single quotation marks must follow SIGNOFF. In most cases, the same rlink file can be used for both SIGNON and SIGNOFF. In the same way that SIGNON does not automatically include LOGON, SIGNOFF does not automatically log you off the remote system unless your rlink file sends the appropriate LOGOFF command to the mainframe. The rlink file *tso.scr* does not LOGOFF at SIGNOFF.

Detailed information and examples of using the SAS micro-to-mainframe link are included in Appendix 2 of the *SAS Language Guide for Personal Computers*, Version 6 Edition.

Attention Macintosh Owners — We Need Some Feedback

— Bill Sterner

Your Computation Center representatives will once again be attending an Apple University Consortium Conference at the end of June. Please collect all your questions, bugs, gripes, satisfactions and whatever else, and send them **IN WRITING** to Bill Sterner at 1155 E. 60th Street or via DEC MM to STAFF.BILL. Be as detailed and explicit as possible on technical issues, and as concise and helpful as possible on the rest. We will pass on your feedback to Apple and share it with other Consortium schools. Don't delay — the sooner we get your information, the more likely it will be heard by Apple.

MacHack '86 -- Apple Macintosh Developers' Conference

Apple Macintosh computer software specialists and suppliers will meet in Ann Arbor, Michigan July 13-16 for MacHack '86, a conference focusing exclusively on programming development for Apple's popular Macintosh microcomputer. Over 100 Macintosh software developers, especially those from university environments, are expected to attend in order to learn, share their knowledge, and to view the latest software development products for their computers.

Conference sessions will run from 9 a.m. to 4:30 p.m. Monday and Tuesday, and from 9 a.m. until noon Wednesday.

The sessions will consist of advanced tutorials, case studies, and panel discussions.

The advanced tutorials will allow programmers to receive in-depth information on new developments in Macintosh technology such as networking and printing, and also on forthcoming programming products.

The case studies will feature descriptions by developers of their programming successes and failures and the factors contributing to each.

The panel discussions will focus on current and future products which assist in writing programs for the Macintosh. Through these panel discussions, developers will have a chance to compare similar products from different vendors and evaluate the relative merits and shortcomings of their development tools.

Major software vendors will also be at MacHack to display their wares. Product displays will run throughout the conference and will be open to the public from 9 a.m. to 4:30 p.m. Tuesday, July 15.

Registration forms for MacHack are available at the Computation Center reception desk, 1155 E. 60th Street, 3rd floor. The registration fee is $125 for regular registration, $25 for student registration.
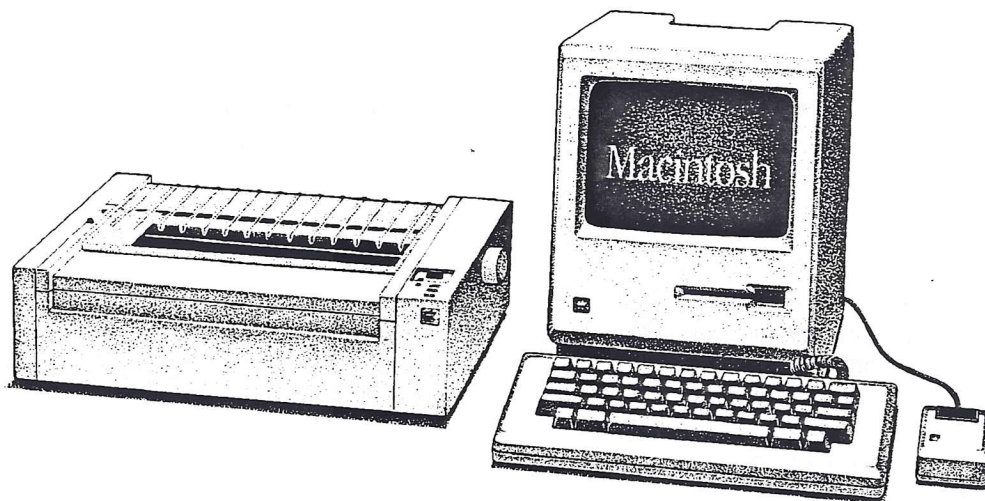
New Products at the Microcomputer Distribution Center

— Joyce Morris

The Microcomputer Distribution Center is now selling the following new software:

Lotus

1-2-3	$219
Report Writer	$67

Microsoft

Macintosh

Word	$60
Basic	$85
Chart	$72
Excel	$218
File	$110
Fortran	$165

IBM and IBM compatibles

Word V3.0	$85
Chart	$165
Basic	$195
Basic Compiler	$217
Windows	$55
Project	$217
Fortran	$195

The Microcomputer Distribution Center also has the following new hardware in stock:

IBM

PC/XT, 256K w/ 2 half-height drives - $1,590

PC/XT, 256K w/ 1 half-height drive and 20M disk - $2020

PC/AT, 512K, 1.2M drive, 30M disk, 8 mhz clock-speed - $3,685

Convertible PC, 256K w/2 3.5" drives - $1,385

(Monitors are *not* included with the above IBM systems.)

Apple

Macintosh Plus, 1MB memory, 800K double-sided internal drive, 128K ROM and SCSI interface - $1,580

Macintosh Enhanced 512K, 800K double-sided internal drive and 128K ROM - $1,100

LaserWriter Plus Printer, 1MB ROM, 35 built in typefaces and 11 font families - $4,320

Hewlett-Packard

Laserjet 500 series Plus Printer - $3,400

Microcomputer Distribution Center pricelists are available at Usite (Wieboldt 310) and from the 3rd floor receptionist at the Computation Center, 1155 E. 60th Street. You can also call the Microcomputer Distribution Center at 962-6086 for further information.

Who and What's New in the Demonstration and Development Lab

— Cathy Kosto

First of all, we would like to welcome Benjamin Jones as the new Assistant in the Demonstration and Development Lab. Ben is quite knowledgeable on the IBM PC, Osborne, and Compaq microcomputers, and has quite a bit of experience working on mainframe computers as well. He has written a Fortran simulation of genetic processes and inbreeding, and is also familiar with several other

programming languages. Ben has experience with dBASE II, as he wrote the system used by the Office of Continuing Education for registering students and maintaining mailing lists. Welcome, Ben!

The following new products have been added to the Microcomputer Demonstration and Development Lab, 1155 E. 60th Street. To make an appointment to see any of the hardware or software in the Lab, call 962-7151.

New hardware includes:

HEWLETT PACKARD 9142A - Tape back-up system for Vectra.

XEROX 6085 MICROCOMPUTER - 1.5M RAM, 20M hard disk, single floppy disk drive, mouse-driven with icons, large monitor screen with 1024 x 750 resolution, runs ViewPoint (Xerox proprietary operating system) and MS-DOS.

XEROX 4045 PRINTER/COPIER - Can act as a Xerox 2700 printer and can also be driven as a Diablo 630.

APPLE LASERWRITER PLUS - Offers additional fonts.

MACINTOSH HARD DISK 20 - Faster and has more storage space than regular floppy drives.

THUNDERSCAN - High Resolution Digitizer for Mac - Scans picture and graphic images into MacPaint file for viewing on the Macintosh. Offers high quality performance at a low cost.

New Software added to the Lab includes:

For Macintosh Computers:

AZTEC C COMPILER - Language for the Macintosh

INTERLACE by Singular Software - Relational database

JAZZ 1A by Lotus - Integrated spreadsheet program for the MacPlus

MAC 3D by Challanger - 3D graphics program similar to MacDraw

MACNOSY Version 2 - A utility for disassembling Macintosh programs

POSTERMAKER - Graphics scaling program for making posters

TEKALIKE Version 2.0 by Mesa Graphics - Graphics terminal emulator for Macintosh and Mac XL. Emulates Tektronix 4010/4014 and 4105 color vector and panel commands in graphics mode; emulates VT100 in text mode. Output on Imagewriter and LaserWriter printers and Apple, Hewlett Packard and Houston Instruments plotters.

TEMPO: MACROS FOR MACINTOSH - Allows a series of repetitions to be programmed to run on one function

THINKTANK 512 - Outline processor for 512K

TML PASCAL - Pascal development system for Macintosh

For the IBM computers:

MARK WILLIAMS "C" COMPILER FOR IBM - Language for the IBM

NORTON UTILITIES - Data recovery for dead disks, supplements DOS operating system

WHAT'S BEST - Works with spreadsheet software (specifically Lotus 1-2-3) to determine mathematically optimal answer; based on proven mathematical technique of Linear Programming

XYWRITE - Word processing package featuring support for many printers

In addition to the above listed software, all of the Microsoft programs for both the Macintosh and the

IBM PC microcomputers have been added to the Demonstration and Development Lab.

Since the *Newsletter* is published quarterly, we recommend using the MICLAB program on either DEC-20 to obtain up-to-date information about hardware and software in the Lab. Using the "new" option, you may limit the display to hardware and software acquired within the last month or week. A complete listing of all hardware and software can also be obtained through MICLAB, or copies are available from the 3rd floor receptionist at the Computation Center, 1155 E. 60th St.
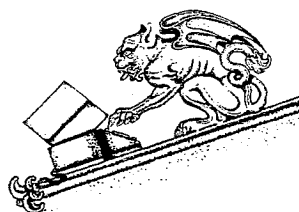
DEPARTMENTS

People

People who have joined the Center:

Benjamin Jones is a Demonstration Laboratory Assistant in the Microcomputer Demonstration and Development Lab. **Daniel Levy** and **Richard Lipinski** have rejoined the Center as Cluster Attendants at Usite.

Transfers/Promotions within the Center:

Thomas Cox, **John Dennison**, **Richard Lipinsky**, **Laura Pedelty**, **Sam Rebelsky**, **Ellen Seebacher**, **Jim Stevens**, **Major Robinson**, and **Marc Zola** have all been promoted from Cluster Attendants to Student Program Advisors. **Christophe de Grazia** has been promoted from Computer Operator in Operating Services to Documentation Specialist with the Instruction and Documentation Services group. **Robert Hettinga** and **Tomasz Sobczak**, Production Expeditor Trainees, have been promoted to Production Expeditors in Operating Services. **Michael Ramsey** has been promoted to Associate Electronics Engineer in Communications Services.

People who have left the Center:

Martha Ash, Lead Staff Analyst in the Information Technologies and New Services Group, has left the Center to join Northwestern University as a Manager within the Microcomputing Support Group. **Arlene Brown**, Senior Staff Analyst in the Information Technologies and New Services Group, has left the Center to join NBI as an Engineering and Systems Consultant. **Nick Burke**, Jr.Programmer/Analyst in the Library Systems Group has left to pursue graduate studies in Economics. **Cathy Mittelstadt**, Stock Clerk at the Microcomputer Distribution Center, has left for graduate study. **Todd Nugent**, Systems Programmer, is now Director of Facilities in the Department of Computer Science.

Documentation

New Documentation Available

> 04/22/86 **4313** SuperWylbur Macros & Profiles
> The memo was updated to describe the currently available public macros. Macros which had been removed from the system were deleted from the memo, and descriptions of new public macros were added.

> 04/10/86 **R81F** SuperWylbur FSE Manual
> This manual describes the use of SuperWylbur as a full screen editor. The screen and line formats are described, as well as the commands used in full screen editing.

> 04/08/86 **4306** SuperWylbur Reference Summary
> This memo was updated to reflect changes due to the new version of SuperWylbur that went into production on 3/31/86.

> 04/08/86 **R81G** SuperWylbur HELP Files
> This is a complete listing of all the SuperWylbur HELP files.

04/08/86 **R81B** SuperWylbur RJE
The manual was generally updated to reflect changes in the new version of SuperWylbur, as well as local modifications made to the system. Some of the examples were revised, and information was included on the new SET BATCH and NOTIFY commands.

04/07/86 **R81G** SuperWylbur HELP Files
A complete listing of all the HELP files for the new version of SuperWylbur. Includes descriptions of the new SuperWylbur functions, the differences between old and new SuperWylbur, as well as the HELP listings for each of the commands.

04/07/86 **R102** TREATISE
The Treatise manual was revised to document the new version of Treatise. It includes information on new Treatise features, discussion of alternate character sets, and an expanded section on trouble-shooting techniques.

04/07/86 **R179C** SCRIPT 85.1 GML User's Guide
A generalized markup language (GML) provides a convenient way of annotating document source for computerized composition. With the GML, each component of the document is identified by a "tag." This manual describes a GML for use with Waterloo SCRIPT.

04/07/86 **R179B** SCRIPT 85.1 Reference Manual
Waterloo SCRIPT is a document composition program used to format an input file containing text and control lines. Formatting is specified by control lines, lines that begin with a control indicator, normally a period, followed by a two-letter control word. The Reference Manual describes the control words in detail, gives information on error messages and system set symbols and macros, and includes sample SCRIPT input and output.

04/07/86 **R179A** SCRIPT 85.1 User Guide
Waterloo SCRIPT is a document composition program. Its full power is realized in the automation of large "structured" documents such as books, manuals, theses, research, technical, and instructional publications containing footnotes, tables, figures, indexes, and tables of contents. SCRIPT is used to format an input file containing text and control lines. Formatting is specified by lines that begin with a control indicator, normally a period, followed by a two-letter control word. The User Guide introduces the various features of SCRIPT and the basic control words. It also discusses SCRIPT macros and provides a tutorial for designing a basic Generalized Markup Language.

Recently Updated Documentation

04/07/86 **6001** Kermit for the IBM PC

New in the MVS Notice File

05/09/86 **TRT11** "Old" Treatise to be removed

04/30/86 **SWYL19** Macro Programs: Limits to using DO/LOOP/SELECT

04/28/86 **SWYL18** SuperWylbur creates missing job cards

04/11/86 **SWYL16** GDG Generation Numbers Listed in Different Order Under ICF Catalog

04/24/86 **SWYL15** SuperWylbur Documentation

03/28/86 **SWYL14** New SuperWylbur as of
3/31/86

03/22/86 **NEWS28** SAS Surcharge Posted

03/19/86 **NEWS27** Instructional Computing
Account Files Must Be Purged

05/01/86 **NEWS26** PCA Regulations

03/06/86 **SAS18** SAS EPIC driver now
supports multiple procs

02/28/86 **SPNX1** TranScript available on
sphinx

New in the DEC Notice File

05/09/86 **TRT6** "Old" Treatise to be
removed

05/01/86 **NEWS27** PCA Regulations

04/17/86 **SVC13** I/O Window Information

02/28/86 **SPNX1** TransScript available on
Sphinx

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization February 1986 - April 1986

Service Provided	Amdahl 5860/MVS February 1986	Amdahl 5860/MVS March 1986	Amdahl 5860/MVS April 1986
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs non-setup jobs tape setup jobs	3:39 1:41 26:32	2:48 1:29 19:59	2:36 1:23 21:18
Total CPU-hours used	175 hrs 24 min	182 hrs 0 min	180 hrs 18 min
Superwylbur sessions CPU hours connect hours average session average CPU/session	21,621 8 hrs 23 min 16,025 hrs 44 min 1.40 sec	22,418 8 hrs 51 min 15,465 hrs 41 min 1.42 sec	22,106 8 hrs 26 min 15,513 hrs 42 min 1.37 sec
TSO sessions CPU hours connect hours average session average CPU/session	3,344 2 hrs 46 min 1,546 hrs 28 min 2.97 sec	3,221 2 hrs 30 min 1,446 hrs 27 min 2.79 sec	3,952 3 hrs 15 min 1,386 hrs 21 min 2.96 sec
Jobs submitted Steps executed	55,307 103,623	56,772 115,464	50,904 110,205

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs February 1986 - April 1986

Program	Description	Percent	Count
UCFLBL20	FILEBOL	9.33	33,888
WYLLIST	SUPERWYLBUR List Offline	8.42	30,580
SASLPA	SAS	7.96	28,912
SORT	SyncSort	4.98	18,088
IEBGENER	IBM file handling utility	4.05	14,717
IBMDEC	IBM/DEC link utility	3.95	14,331
IEFBR14	IBM utility - null step	3.53	12,814
IEWL	Linkage editor	2.91	10,548
SUCCESS	Operating Services utility	2.37	8,613
FAIL	Operating Services utility	2.34	8,494
MARKYBOL	Systems utility	2.34	8,483
IDCAMS	VSAM utility for catalog operations	2.24	8,138
SPSSX	SPSS Version X	1.89	6,877
BATCH204	Model 204 run in batch	1.70	6,173
PGM = *.DD	User defined routines	1.53	5,551
IELOAA	PL/I compiler	1.13	4,115
COMPUSET	Xerox text composing program	1.12	4,069
SCRIPTW	Script text formatting program	1.10	3,990
XRXINT	Xerox print formatter	1.02	3,700
MVGDG	Multi-volume tape GDG cycler	0.94	3,429

CHIP - DECsystem-2060 Utilization Feb. 1986 - Apr. 1986

Account Period	February 1986		March 1986		April 1986	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	70.1	4739	71.8	4226	65.9	4637
EVENING	33.6	1084	34.3	1132	36.4	1025
OVERNIGHT	31.8	878	39.1	922	41.5	888
TOTAL	135.5	6701	145.2	6280	143.8	6550

Top Twenty Chip Programs February 1986 - April 1986

Program	Description	Percent	Count
OPR	Operator functions	7.33	20,094
MM	Electronic mail manager	5.86	16,080
MUSE	Full screen editor	5.56	15,252
PTYCON	Pseudo-terminal controller	4.81	13,199
IBMSPL	MVS link daemon	4.73	12,984
FOONET	Supports mail forwarding between Chip & Dale	4.68	12,840
SYSJOB	System job controller	4.68	12,839
WATCH	Generates these statistics	4.68	12,839
MMAILR	Network mail daemon	4.68	12,835
SYSDPY	Operator interface with job queues	4.56	12,497
NETSRV	Supports ethernet network functions	4.55	12,489
SHRSRV	File transfer daemon	4.53	12,424
BITNET	Off-campus electronic mail network	4.51	12,358
WINDOW	Full screen PTYCON	4.47	12,265
EXEC	TOPS-20 command processor	4.37	11,983
USAGE	Utility to collect program use data	3.87	10,601
RWHOD	Lists users on ethernet hosts	3.55	9,727
EMACS	Full screen editor	3.14	8,607
MINITA	Minitab	1.61	4,411
SENDER	Local mail daemon	1.58	4,332

DALE - DECsystem-2060 Utilization Feb. 1986 - Apr. 1986

Account Period	February 1986		March 1986		April 1986	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	62.9	3772	60.5	2433	34.0	1912
EVENING	28.7	1282	29.0	756	18.4	455
OVERNIGHT	30.1	1807	41.9	651	27.1	498
TOTAL	121.7	6861	131.4	3840	79.5	2865

Top Twenty Dale Programs February 1986 - April 1986

Program	Description	Percent	Count
OPR	Operator functions	8.25	17,037
SYSDPY	Operator interface with job queues	6.51	13,429
WATCH	Generates these statistics	6.11	12,616
PTYCON	Pseudo-terminal controller	6.05	12,496
BITNET	Off-campus electronic mail network	5.99	12,354
SYSJOB	System job controller	5.99	12,353
MMAILR	Network mail daemon	5.99	12,353
FOONET	Supports mail forwarding between Chip & Dale	5.99	12,352
IBMSPL	MVS link daemon	5.98	12,338
WINDOW	Full screen PTYCON	5.94	12,251
USAGE	Utility to collect program use data	5.86	12,090
SHRSRV	File transfer daemon	5.84	12,059
MUSE	Full screen editor	4.57	9,427
EXEC	TOPS-20 command processor	2.70	5,570
EMACS	Full-screen editor	2.65	5,469
MMAILR	Network mail daemon	2.20	4,547
SENDER	Local mail daemon	1.59	3,286
BATCON	Batch Controller	1.44	2,969
1022	Database system	1.33	2,739
DEMAND	Data management system	1.03	2,133

General Information

Computation Center Administration

Director of the Computation Center	Carolyn D. Autrey-Hunley	962-7690

Associate Director
Operations and Technical Services | John E. Iannantuoni | 962-7616

Assistant Directors
Instruction and Research Information Services	Harold C. Bloom	962-7155
Information Technologies and New Services	George R. Bateman	962-7174
Administrative Information Services	David E. Trevvett	962-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	962-7151
Microcomputer Distribution Center	1307 E. 60th St.	962-6086
Multi-media Classroom	Harper 406	962-7153
Usite Terminal Cluster	Wieboldt 310	962-7894

Computer Communications Information

Phones	300 baud	1200 baud	2400 baud	4800 baud	9600 baud
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	300 baud	1200 baud	2400 baud	4800 baud	9600 baud	telenet
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20 (Chip)	chip	chip	chip	chip	chip	chiptn
DEC-2060/TOPS-20 (Dale)	dale	dale	dale	dale	dale	daletn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	General address	Example
Amdahl 5860 (MVS)	logonid@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username%chip@uchicago	staff.hal%chip@uchicago
DEC-2060 (Dale)	username%dale@uchicago	staff.hal%dale@uchicago
Pyramid 90x (Sphinx)	person-id%sphinx@uchicago	halb%sphinx@uchicago

Telenet dial-in information

	Nearest phone number	Network address
	800-336-0437 most states	31236A (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)

Quick Reference Phone Directory

Information
General 962-7151
Machine status 962-7626

Accounts
Billing information & records 962-7158
Opening class accounts 962-7159
Opening PCA and regular accounts . . . 962-7158
Refunds 962-7624

Advice and help
Applications software 962-7624
   Reporting problems
   Suggestions & complaints
Office support systems 962-7174
   Microcomputers
   Terminals
   Word processors
Social Science computing 962-7892
   ICPSR data codebooks
   SAS & SPSS-X consulting

Computer supplies & tapes 962-7159

Custom services
Microcomputer technical services 962-7453
Printing 962-6081
Programming 962-7166

Data entry services 962-7604

Dataset recovery
PCA accounts 962-7159
Other accounts 962-7621

Documentation 962-7452

Magnetic tape services 962-7614

Microcomputers
Appointments for demonstrations 5-3971
   (Off campus phone number) 962-7151
Consultation on equipment 962-7174
Custom technical services 962-7453
Purchase of microcomputers 962-6086

New software requests 962-7166

Production jobs & special handling . . 962-7602

Purchases
Computer supplies & tapes 962-7159
Microcomputers 962-6086
Used equipment 962-7615

Repairs
Macintosh microcomputers 962-7663
Terminals 962-7663

Subscriptions to the Newsletter 962-7159

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
_____

City
_____

State   Zip
_____

THE UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Research Institutes
1 AppleTalk Interface
3 Apollo
1 Elxsi 6400
1 Harris 1200
7 SUN Workstation
1 VAX 780

Searle
1 Celerity 1200
1 MicroVAX II
1 VAX 780

Hinds

Cummings
1 VAX 780

Abbott

Jones

Ryerson-Eckhart
1 Pyramid 98xe
1 Ridge-32
10 SUN Workstation
1 VAX 750

Walker
1 DEC System 2060
1 VAX 8600

Woodlawn

59th St

ETHERNET

━━━━━━━ In Place
▓▓▓▓▓▓▓ Proposed

Computation Center
1 DEC System 2060
1 Pyramid 98xe

Fall 1986   **Edited By: Yvonne Behn**   **Vol. XXII, No. 3**

COMPUTATION CENTER OPEN HOUSE

OCTOBER 24, 3 - 5 P.M.

1155 EAST 60TH STREET

(DIRECTLY SOUTH OF ROCKEFELLER CHAPEL)

- Machine room tours: see the Amdahl 5860, the DEC, the Pyramid, the 9700s, the Gandalf, and much, much more!

- See fascinating exhibits:

  - Electronic printing and publishing
  - Electronic mail, including network maps
  - EPIC examples
  - Mainframe graphics
  - Historical exhibit of modems, computer cards, etc.
  - Communications display of cables, connections, etc.
  - Office Local Area Networks

- See the inside of a Mac and an IBM PC!

- Visit the Microcomputer Demonstration and Development Laboratory and see a number of micros running different programs!

- Plenty of refreshments!

Bring your friends!

Table of Contents

GENERAL NEWS

Director of the Computation Center Resigns; Acting Director Named

— *Ernie Froemel*

Carolyn Autrey-Hunley, Director of the Computation Center, resigned in July to accept a position as Associate Vice Provost for Information Technology and Director of the Academic Computing Center at the University of Michigan. Her new position includes campus-wide responsibility for the use of computing in instruction and research efforts, as well as responsibility for their Computation Center itself.

Carolyn joined the University of Chicago Computation Center as Assistant Director for Academic Services in 1982 and became Director in 1984. During these past four years, the Computation Center has undergone significant changes. Most obviously, the world of microcomputers was entered; electronic publishing and printing was developed; the Pyramid was acquired; networking, especially Ethernet on campus, became a challenging priority; the large mainframe computer changed both in hardware and operating systems; and, the Computation Center moved into a new building.

The University Administration is now conducting a nation-wide search for a Director of the Computation Center. The time required to review applications, interview candidates, and select a director is anticipated to be three to nine months. During that time, the Computation Center will continue to progress under the leadership of John Iannantuoni who has been named Acting Director.

John has worked at the Computation Center since 1968 in several technical and managerial roles. He began as a programmer with the Applications Systems group, became manager of that group and then manager of Operating Systems before he was appointed Assistant Director responsible for Operating Systems and Data Base Support, Communications Services, Production Services, Computer Operations, and Hardware Planning. His most recent assignment was Associate Director for Operations and Technical Services. Because of that variety of experience, John has a unique understanding of the blend of services required to meet the computing needs of the University of Chicago. He is also very aware of projects currently underway and plans for future computer developments.

The Board of Computing Activities and Services 1986-87

The Board of Computing Activities and Services was established to provide policy and general guidance to the University in all matters of computing activity and services. It advises the President and Provost with respect to all such matters; it sets policies regulating the scope, functions and objectives of the Computation Center and computing activities and services on campus; it develops, reviews and recommends long-range plans; and it reviews and recommends approval of the annual Computation Center budget for expenditures and income.

The members of the Board of Computing Activities and Services for 1986-87 are:

Robert L. Graves, Chairman; Associate Provost for

Computing and Information Systems, and Professor, Graduate School of Business

W. David Arnett, Bernard and Ellen C. Sunny Distinguished Service Professor, Departments of Astronomy and Astrophysics, Physics, Enrico Fermi Institute and the College

Robert L. Ashenhurst, Professor, Graduate School of Business and Marshall of the University

Anthony Bryk, Associate Professor, Department of Education and the College

Eugene DeSombre, Professor, Ben May Laboratory

Todd Dupont, Associate Chairman, Department of Computer Science, and Professor, Department of Mathematics and the College

Robert T. Michael, Professor, Department of Education and the College, Director, National Opinion Research Center, and Chairman, Committee on Demographic Training

Robert J. Morrissey, Assistant Professor, Department of Romance Languages and Literatures and the College

Norman H. Nie, Professor and Chairman, Department of Political Science, and Research Associate, Cultural Pluralism Program, NORC

Michael O'Donnell, Professor, Department of Computer Science

H. Thomas Reepmeyer, Director of Information Systems and Finance, Division of the Biological Sciences

Douglas W. Schemske, Associate Professor, Department of Biology and Committee on Evolutionary Biology

David L. Wallace, Professor, Department of Statistics and the College

George B. Walsh, Associate Professor, Department of Classical Languages and Literatures, Committee on Ancient Mediterranean

World, Committee on General Studies in Humanities and the College

John E. Iannantuoni, Acting Director, Computation Center, *ex officio*

Walter E. Massey, Vice President for Research and for Argonne National Laboratory, *ex officio*

Martin Runkle, Director, University Library, *ex officio*

Norman M. Bradburn, Provost, *ex officio*

Hanna H. Gray, President, *ex officio*

Computation Center Orientation Booklet Available

The Computation Center has recently published an *Orientation Booklet* which was distributed to new students in their orientation packets. It includes descriptions of the various services and facilities of the Computation Center, as well as introductory articles on choosing which computer to use, using electronic mail, and printing on-line documentation. Additional copies of the booklet are now available at the Computation Center reception area and at Usite (Wieboldt 310).

Increased Allocations for PCA Accounts

The University administration has recently announced an increase in the allocations for PCA accounts. The new PCA policy statement is as follows:

Personal Computing Accounts (PCAs) are available annually to faculty, registered students and University Hospital interns and residents. These accounts may be used on any of the Center's computers, and are valid for a period of one year from the date they are opened. Accounts are opened at the Business Office upon presentation of a validated University identification card. PCA accounts are funded as follows:

1. PCAs for students and University Hospital interns and residents will be funded at a level of $400 per year.

2. PCAs for faculty members are funded at $800 per year.

3. A PCA holder can pay $100 by cash or check for additional computing and will then receive an additional $200 of computing after the $100 has been spent. This option may be exercised only once during the year the PCA is valid. The $100 must be paid in total and cannot be billed to a University account.

    If the initial $100 is not spent, the holder may request a refund; however, there is no refund or carryover of unspent funds from the $200 allocation.

Instructional Computing Accounts

— *Yvonne Behn*

Instructional computing funds are allocated by the Provost of the University for course-related use of the Computation Center's computer systems. Instructors wishing to use Computation Center computers fill out a one-page form containing information about the course, how computers will be used, and the amount of funding for each student, and submit the form to the Computation Center Business Office. After the request has been approved, information about the course is entered in an on-line database.

As part of the registration process, each new student is assigned a person-id, a unique four-character code which identifies the user to the computer. The person-id is printed on the student's validation card, and a sealed envelope with the password is placed in the individual student's registration packet. Anyone missing a password envelope should notify the Business Office at 962-7158. Faculty members, staff, residents and interns who do not have a person-id may obtain one from the Business Office. Individuals who have forgotten their person-id or password should also visit the Business Office.

Students in courses for which funds have been allocated must login to TSO, either under a previously set up instructional computing logon-id or under a special account ($$$ followed by their person-id). They then access the CLAIMS program which assigns them a logon-id, if they do not already have one, to be used for all course-related computing. This program also accesses the on-line database and allocates to the students the amount of money associated with the course. Any time students withdraw from a course for which funds were allocated to their account or change sections of a course, they must use the CLAIMS program to report the drop or change. If a course is dropped, the appropriate amount of funds will be deducted

from their instructional computing account.

In order to use the system, students must know both their person-id and its associated password. If they do not have this information, they must come to the Computation Center Business Office with proper identification to obtain their person-id or have their password reset.

Computation Center Seminars for Fall Quarter

The Computation Center will be offering several short seminars during the Fall Quarter which will be open to the general University community. These seminars are free of charge and are designed for the new computer user. Except where prerequisites are noted, no prior knowledge of computers is necessary. All seminars will meet in Harper 406.

CC115 - Orientation to UofC Computing

Dates/Times: Mon., 10/06/86, 9:00-10:00 am
                 Tue., 10/07/86, 11:00-12:00 am
                 Wed., 10/08/86, 10:00-11:00 am
                 Thu., 10/09/86, 4:00-5:00 pm
Prerequisites: None
Instructor: Ed Donner

This seminar will identify the various departmental computers, microcomputer sites, and Computation Center computers which are available on campus. Ethernet, the network connecting several of these computers will also be described. A major part of the seminar will be a description of the Computation Center facilities and the differences between them.

The seminar will begin with a short tour of the Central User's Site (Usite) and move to the multimedia classroom (Harper 406) for the main part of the presentation.

CC205 - Introduction to the Amdahl 5860

Dates/Times: Mon., 10/13/86, 3:30-5:00 pm
                 (Part 1)
                 Wed., 10/15/86, 3:30-5:00 pm
                 (Part 2)
                 Thu., 10/16/86, 3:30-5:00 pm
                 (Part 3)
Prerequisites: None
Instructor: Ernie Froemel

This three-part seminar will introduce you to the large mainframe, the Amdahl 5860.

Part 1 (1.5 hours) will describe the major components of the system and explain the basic features of SuperWylbur, in particular how to logon, create and edit text, save and scratch files, and run batch jobs.

Part 2 (1.5 hours) will describe the dataset security system and explain how to use TSO to logon and create or change dataset access rules. Using AMDB to monitor account status will also be discussed.

Part 3 (1.5 hours) is devoted to the full-screen products on the Amdahl. Both Full Screen SuperWylbur and ISPF on TSO will be demonstrated.

CC210 - Introduction to the DEC-20

Dates/Times: Mon., 10/20/86, 3:30-5:00 pm
                 (Part 1)
                 Wed., 10/22/86, 3:30-5:00 pm
                 (Part 2)
Prerequisites: None
Instructor: Beth Christy

Part 1 (1.5 hours) introduces the DEC-20 at the University of Chicago. Logging on, the command structure, and the file system will be explained.

Part 2 will survey the software available on the DEC-20 and demonstrate basic commands for creating and manipulating files.

CC220 - Introduction to the Pyramid/Unix System

Dates/Times: Mon., 10/06/86, 3:30-5:00 pm
                (Part 1)
                Wed., 10/08/86, 3:30-5:00 pm
                (Part 2)
Prerequisites: None
Instructor: Melinda Shore

This seminar emphasizes a practical introduction to the Pyramid/Unix system (called the sphinx computer). It will stress how to logon to the system and will demonstrate some of its basic features.

Part 2 (1.5 hours) will demonstrate more of the basic commands. The differences between "Computation Center" Unix and "standard" Unix will also be discussed.

CC430 - Text Formatting with Script and Treatise

Dates/Times: Mon., 10/27/86, 3:30-5:00 pm
                (Part 1)
                Wed., 10/29/86, 3:30-5:00 pm
                (Part 2)
Prerequisites: CC 205
Instructor: Melinda Shore

Part 1 (1.5 hours) will discuss using Script to prepare text (books, papers, letters, etc.) on the Amdahl 5860.

Part 2 (1.5 hours) will explain how to use Treatise, a program designed to format dissertations according to University standards.

CC470 - Typesetting emulation with Xset

Dates/Times: Thu., 10/30/86, 3:30-5:00 pm
Prerequisites: CC 205
Instructor: Joyce Weil

Creating resumes or other text, such as this *Newsletter*, is simplified by using Xset. This seminar will focus on the Xset environment and commands.

CC910 - Electronic Mail at the UofC

Dates/Times: Thu., 10/23/86, 3:30-5:00 pm
Prerequisites: Either CC205 or CC210 or CC220
Instructor: Eric Nelson

This seminar will acquaint you with the use of Bitnet, Ethernet, and UUCP for sending mail or files between computers on this campus and throughout the world.

TEX Is Available on Sphinx and Chip

— *Melinda Shore*

TEX version 2.0 and the new Metafont are now available on sphinx and Chip, and TEX should be available to run in batch under MVS in the near future.

TEX is a computer typesetting system in which the user embeds formatting commands in the text, very much like Script, XICS, Runoff, and nroff/troff (as contrasted with "what-you-see-is-what-you-get word processors like Muse, WordStar, and MacWrite). It was designed by Donald Knuth of Stanford for typesetting his "Art of Computer Programming" series, so it has excellent support for typesetting mathematics and technical text. TEX accepts the marked-up text as input, and writes a "device-independent" .dvi file as output. This .dvi file describes precisely where on the output page the various pieces of text should be placed, which fonts should be used, and so on. You need a printer driver designed specifically for your printer to be able to print the .dvi file. The printer driver translates the .dvi file into commands for the printer, combines them with the appropriate fonts, and (usually) sends the information directly to the printer.

We don't have an output driver available yet, but a driver for the Xerox 9700 printers will be ready soon, and a driver for the Talaris (the printer connected to sphinx) may be available sometime later.

The fonts that T_EX uses were also designed by Knuth, using his font design system called METAFONT. METAFONT allows the user to write a "program" for each character in a typeface, and then compile the font into a device-independent form. These device-independent font files are combined with the .dvi files by the printer driver in order to produce hard-copy output. The fonts that are typically used with T_EX are known as "Computer Modern," and are available in two versions. The older AM fonts were supported by earlier versions of T_EX, and are widely available. The new CM fonts are being distributed with T_EX version 2.0, and there are hopes within the T_EX community that these will completely supercede the AM fonts.

T_EX also comes with a set of macros that make it considerably easier to format documents than with "raw" T_EX. In general, these macros define certain document formats and styles, and allow the user to identify what a piece of text is, rather than having to describe how to place it on the page. These macro packages include AMST_EX, which formats documents according to the style required by American Mathematical Society publications, and LaT_EX, which is a general set of macros supporting a variety of document styles. These macros should be used wherever possible instead of using "raw" T_EX.

At this time, T_EX on Chip is only available in "test mode." (See the article on the TEST program in the TOPS-20 section of this *Newsletter*.) At the beginning of your session, type

@TEST TEX

at the TOPS-20 prompt. Typing *TEST WARN TEX* will print out additional information that you may want to know about running T_EX in the TOPS-20 environment. Once you are testing T_EX, typing *TEX* will start T_EX, *MF* will start Metafont, and so on.

T_EX and Metafont are available on sphinx as *tex* and *mf*, respectively (case is significant). See the appropriate man pages for additional information

about running T_EX and its related programs under Unix.

In addition to standard vanilla T_EX, we also have LaT_EX, BibT_EX (a bibliography formatting system for use with LaT_EX), and SliT_EX (a formatting system for slides) available on Chip and LaT_EX on sphinx.

We have purchased a driver for the Xerox 9700 printers from Textset, Inc. This software allows the 9700 to produce one- or two-sided T_EX output on 8 1/2 x 11 inch paper at 120 pages per minute. The current version of this driver supports the old AM fonts only, and does not support expanded font memory on the printer, should the printer have it. We will be receiving a new version of the Textset driver within the next six months. The new version will provide access to CM fonts and will allow more fonts per page. Documentation will be released when the driver becomes available.

Version 2.0 of T_EX uses the new CM fonts by default. Because the 9700 .dvi driver which will be installed uses the old AM fonts and because not all sites have the CM fonts yet, we have prepared a version of plain T_EX for use on Chip that uses the AM fonts. If you want to use the AM fonts, invoke T_EX as follows:

@TEX &APLAIN

We also have a version of WEBMAC (for programmers working in the WEB language) that uses the AM fonts. To use it, change the first line of your WEAVE output from \input webmac to \input awebmac. We will make the AM versions of T_EX and WEBMAC available on sphinx if there is sufficient demand (contact the Program Advisor).

Documentation for using these typesetting systems is published by Addison-Wesley and is available in many bookstores. In particular, T_EX is detailed in *The T_EXbook* by Donald Knuth, METAFONT is explained in *The METAFONTbook* also by Donald Knuth, and LaT_EX is described in *LaT_EX: A Document Preparation System* by Leslie Lamport.

Users who need assistance in working in the U of C T_EX environment, or who may be purchasing T_EX for their microcomputers and need help in

selecting and configuring the proper T$_E$X imple-mentation should contact Melinda Shore at 962-8189.

MAILNET Support to be Terminated

— *Ron Rusnak*

MAILNET, the dial-up long-distance network admin-istered by EDUCOM, is to be phased out by June 1987. The reason given by EDUCOM for the ter-mination is the growing number of other networks reaching the same universities which MAILNET supports.

The following is a list of the sites currently acces-sible by MAILNET:

CARNEGIE	Carnegie-Mellon University
DICKINSON	Dickinson College
Durham	University of Durham
EDUCOM	EDUCOM
GRINNELL	Grinnell College
Harvard	Harvard University
IOWA-STATE	Iowa-State University
MIT-Multics	Massachusetts Inst. of Technology
Newcastle	University of Newcastle
NJIT-EIES	New Jersey Inst. of Technology
NORTHWESTERN	Northwestern University
NTSU	North Texas State University
OISE	Ontario Inst. for Studies in Education
QZCOM	University of Stockholm
RPI-MTS	Rensselaer Polytechnic Institute
STANFORD	Stanford University
UBC	University of British Columbia
UCL-CS-MAILNET	University of Southern California
UMich-MTS	University of Michigan
UNCA-MULTICS	University of Calgary
Union	Union College
USC-MAILNET	University of Southern California
MACCWISC	University of Wisconsin — Madison
VANDERBILT	Vanderbilt University

A list of alternate methods for sending mail to these sites will be available at a later time.

What's Up on the Campus Ethernet?

— Ron Rusnak

The Ethernet Project was designed to provide a high-speed communications network among several distributed University computing sites. In the past two years the campus ethernet has grown to over three dozen connected machines, shown by the map on the front cover of this *Newsletter*.

The following is a list of the currently accessible machines on the network:

Department	Machine Name	Computer
Computation Center	chip	DEC-System 2060
	sphinx	Pyramid 98xe
Materials Research	mrl-kinetics	AppleTalk Interface
	bose	SUN workstation
	control	SUN workstation
	fermi	SUN workstation
	kaos	SUN workstation
Graduate School of Business	gsbadm	DEC-System 2060
	gsbacd	VAX 8600
Department of Astronomy and Astrophysics	guts	SUN workstation
	rigel	SUN workstation
	strider	SUN workstation
	oddjob	VAX 780
	donner	Apollo
	erda	Apollo
	wotan	Apollo
Department of Biophysics	biovax	VAX 750
Department of Chemistry	pico	Celerity 1200
	silly	MicroVax II
	alchemy	VAX 780 w/FPS-164

Department of Computer Science	cerberus	AT&T 3B5
	anubis	Pyramid 98xe
	alexandria	SUN Workstation
	midas	SUN Workstation
	odonnell	SUN Workstation
	simon	SUN Workstation
	sun50	SUN Workstation
	sun51	SUN Workstation
	sun75	SUN Workstation
	gargoyle	VAX 750
Department of Mathematics	euler	Ridge-32
	daisy	Sun Workstation
Division of Physical Sciences	phylo	Elxsi 6400
	harry	Harris 1200
Department of Statistics	egon	SUN Workstation
	galton	SUN Workstation
	karl	SUN Workstation

We expect that before the year is out, there will be connections to machines in the Medical Center and Geophysical Sciences. The Computation Center is also planning to connect the Amdahl 5860.

MVS

2400 Baud Dial-Up Access to MVS Is Now Available

The Computation Center has announced that users can now access the MVS system using modems at 2400 baud. The pool of MVS24 lines can be requested by simply entering *mvs24* in response to the *ENTER CLASS* prompt. Make sure that your terminal is set to 2400 baud before attempting to establish communication at that speed, and that your modem or DOB is also set to 2400 baud.

The MVS24 lines are accessible from off campus by dialing in to the 2400 baud pool of modems at 753-0975. People using ITE/DOBs continue to dial 5-3600 for any baud rate.

SAS Versions Available on the MVS System

— Jim Lichtenstein

The current production version of SAS is 5.16. This is the latest maintenance release of the system and

it has proven to work faster and to be less error prone than previous releases of version 5.

We have kept Version 82.4 as a backup for quite some time now because the changes instituted by Version 5 were troublesome for some people. However, the SAS Institute will no longer support 82.4, so no new programs should be written using it, and all current programs should be converted to Version 5 as soon as possible. Towards the end of October, Version 82.4 will become restricted. That means that if you want access to it, you will have to call Jim Lichtenstein at 962-7165 and request it. Access will be given if you can demonstrate that you are experiencing problems with Version 5 and upon the assumption that, with professional assistance, an effort will be made to convert to Version 5.

Status of IBM FORTRAN Compilers

— Gary Buchholz

In May of this year, IBM officially dropped support of the FORTRAN H-Extended compiler. Shortly before that, support was dropped on the FORTRAN G1 compiler. Currently, the only supported IBM compiler implementing the FORTRAN language definition is VS FORTRAN. IBM VS FORTRAN implements the X3.9-1978 standard also known as FORTRAN 77 and, in addition, runs in a compatibility mode allowing the compilation of programs written under the previous and now obsolete G1 and H-Extended versions.

The Computation Center is considering removal of these old, non-supported compilers from the public system libraries, consistent with IBM's philosophy of a single FORTRAN compiler environment.

Users are encouraged to use this new compiler. Although there are some differences, most programs written under G1 and H-Extended which

adhere to the formal language definition should compile under VS FORTRAN running in compatibility mode. The differences, as well as hints for conversion, are documented in the VS FORTRAN manuals available at USITE (R525-526).

Not only does VS FORTRAN 77 implement more powerful language constructs, it also offers full use of the MVS-XA environment. (See the article in this section "MVS/XA Is Coming.") Other features of the new version include: access to new mathematical functions, access to VSAM data sets, improved diagnostic support, improved I/O support, character data handling, automatic precision increase of floating point variables without recoding, mathematical vectorization (high-speed vector add/multiply), interactive debug support, multi-tasking and dynamic loading of reentrant modules which increases execution speed and provides virtual storage constraint relief.

Given this positioning of the VS FORTRAN 77 product by IBM, it is unlikely that commercial software developers will continue to invest in the development and maintenance of software directed to the now obsolete and unsupported G1 and H-Extended versions. Although it may require some initial effort, the conversion of existing user-written FORTRAN programs developed under G1 and H-Extended to a form compatible with VS FORTRAN LANGLVL(66) is strongly encouraged. Users would then be in an excellent position to take advantage of new VS FORTRAN enhancements, as well as make use of forthcoming commercially developed FORTRAN support packages.

Conversion Resources and Aids

VS FORTRAN Language and Library Reference
   Appendix B. "IBM and ANS FORTRAN Features"
   Appendix G. "Assembler Language Information"

VS FORTRAN Programming Guide
   Appendix A. "Assembler Language Considerations"
   Appendix C. "Differences between VS FORTRAN and other IBM FORTRANs"

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IBM FORTRAN Language Conversion/ Program Overview

Running VS FORTRAN

Catalogued procedures equivalent to those for FORTRAN H-Extended and FORTRAN G1 exist for VS FORTRAN in the default system proclibs as FORTVC/CL/CLG. You can simply replace the proc names in your current JCL with the VS FORTRAN equivalents. You will also want to include the compatibility option specified as a compiler option as shown in this example:

```
//VSFORT JOB (PPPUUUU),TRYIT,
//    MSGCLASS = X,REGION = 1024K
// EXEC FORTVCLG,PARM.FORT = 'LANGLVL(66)'
//FORT.SYSIN DD *

   (Fortran source program)

/*
// (additional LKED and GO JCL as required)
```

Please report any difficulties to Don Goldhamer at 962-7166.

Laser Labels Are Coming!
Laser Labels Are Coming!

— helen seren

In time for the Christmas season, for your nearest and dearest, for all your holiday cards, only the very best will do. Adhesive laser labels will soon be available at your own Computation Center. Say goodbye to smeary impact-printer labels because once you experience the legibility of laser labels you'll never be satisfied with anything less.

We have held back from 9700-produced labels for a long time because other laser users had exper-

ienced a lot of problems with the label stock itself. The 9700 uses heat to put your data on the page, and melting label adhesive spreading around the printer parts just doesn't do it a bit of good. But in the 1980s, technology triumphs over all. If we can put a man on the moon, surely we can keep the adhesive out of the printer!

The Center staff has been testing a variety of label stock and we have found some that work quite well. Our first offering will feature 33-up labels, 3 across by 11 down in the portrait orientation, and is called **AL33**. You will be able to use these labels in place of the small size impact printer labels (9011 by name).

Comparing the two type of labels, here are the facts:

	AL33	9011
Label Width	2-27/32"	3-1/2"
Label Depth	1"	15/16"
Lines/label	7	7
Characters/line	35	35

From the above numbers you can see that AL33 is shorter in width than 9011 although you have the same number of characters per line. To achieve this, we use a slightly smaller type size but with absolutely no degradation in legibility. In fact, these labels are so easy to read the U.S. Postal Service will jump for joy.

As far as user access, it couldn't be easier. If you now use the current label program (EXEC LABELS) for small labels, you could actually direct the output to a 9700 with appropriate JCL and /*OUTPUT card changes. You would, however, print, and have to pay for, the generated impact printer alignment labels.

There is an easier alternative. SuperWylbur listoff, FILEBOL, IEBGENER, or any other listing program can be used to print your labels. Enter your data with column one reserved for carriage control. Each new label begins with a '1' in column one, as if it were a new page. You'll be able to request "east-west" (row by row) or "north-south" (column by column) order just by using a different PFOR-MAT.

Only one font is available for now. And, oh yes, simplex only. An upcoming memo will have complete details.

Watch for more information on availability and pricing of laser labels, coming soon to a 9700 near you!

MVS/XA Is Coming

— *Ron Thielen*

MVS/XA (eXtended Architecture) is IBM's latest and most advanced operating system. We will convert the Amdahl to MVS/XA this winter. While the conversion is a major undertaking for the Computation Center, our users should not be required to make any changes.

The current MVS architecture (MVS/370) is limited to addressing 16,777,216 ($2^{**}24$) bytes (16 megabytes) of memory. This "virtual address space" is the theoretical maximum memory available to an MVS batch job or TSO user. In reality, the operating system uses more than half the address space, leaving between 6 and 7 megabytes for your program's use.

MVS/XA provides an address space of 2,147,483,648 ($2^{**}31$) bytes. Not all of this 2 "gigabytes" of memory is directly available to your program. Special techniques are required for addressing beyond the "16 megabyte line." However, IBM has recoded much of the operating system to take advantage of the expanded addressability, moving pieces of the system above the "16 megabyte line" and increasing the amount of memory available to ordinary programs below the "16 megabyte line." Since much of the operating system was redesigned, IBM took the opportunity to functionally enhance many areas, increase reliability, and increase efficiency.

The major beneficiaries of the MVS/XA conversion will be our administrative online users and TSO users. Online systems such as CICS and Model204 tend to be the largest users of virtual storage. The vendors for these systems have implemented or are in the process of implementing the special techniques required to take full advantage of the 2 gigabyte address space.

TSO users have already benefited, because MVS/XA required the installation of ISPF Version 2, accomplished in July. TSO under MVS/XA will be further enhanced by the installation of TSO/E (TSO/Extensions). TSO/E provides many new fea-tures and enhancements to old TSO features. Documentation for TSO/E will be provided at the time of conversion.

MVS/XA is IBM's base for all future enhancements to the MVS environment. Future hardware and software products will only be usable by those installations running MVS/XA. IBM has repeatedly stated that any installation not running MVS/XA should at least be planning to get to it as soon as possible. By keeping current, we insure that we will be positioned to take advantage of new technology and provide you with the best service possible.

TOPS-20

DECsystem-20 Dale Is Gone

— *Christophe deGrazia*

Because use of the Computation Center's two DECsystem-20s had diminished enough to be supported by one DECsystem-20, the DEC-20 known as Dale was removed on July 27th.

All disk structures formerly on either DEC-20, and all files on those structures, now reside on the DECsystem-20 known as Chip. Disk structure CHIP: is now the only DEC-20 public structure. Disk structure DALE:, formerly the public structure on Dale, has become another domestic structure on Chip. Accordingly, the amount of disk space allocated to a user's directory on structure DALE: has increased from a maximum of 100 pages of disk space to a maximum of 10,000 disk pages.

The migration of disk structures, software, and files from the late DEC-20 Dale to the new DEC-20 Chip was planned and executed in such a way as to minimize its adverse effect upon users. Chip is still connected to the campus ethernet. Although contracts for the late Dale's software will be allowed to expire, the corresponding software contracts for Chip will be renewed. Those DEC-20 users who have relied exclusively on Chip will experience little if any change aside from easier access to the disk space available on structures DS1:, DS2:, and DALE:. Former Dale users, however, might need to make some changes in whatever start-up files they have relied upon — such files as electronic mail

(MM), MVS (link) program, and EMACS editor "init" files, as well as their LOGIN.CMD files. Former Dale users might also have to modify whatever programs and procedures they had used which make explicit reference to structure "DALE:". Finally, since a DEC-20 user's Chip password is not necessarily the same as the password he had used on Dale, any user who has relied primarily on the late DEC-20 Dale, and cannot recall his Chip password, will need to have his Chip password changed before he can login to the DECsystem-20.

Any DEC-20 user who finds he cannot login to the new DEC-20 Chip should go to the Center's Business Office (1155 E. 60th Street, Room 336) to have his DEC-20 password changed.

For further suggestions on adjusting to the elimination of Dale and the migration of disk structures and files to Chip, enter the command:

@ TYPE NOTES:ONEDEC

once you have successfully logged-in to Chip.

The Computation Center plans to remove Chip, its last DEC-20, by July 1989. If an appropriate alternative for University-wide DEC-20 usage can be found, DEC-20 Chip might be phased out earlier. Chip will not be removed, however, any earlier than July 1988.

We at the Computation Center encourage the University's DEC-20 users to let us know their current and future data-processing needs, so that we might better plan to meet those needs. Comments and suggestions should be addressed to Hal Bloom at 962-7155 or mailed to Staff.Hal on Chip.

PASCAL version 14
PCL
SITGO
SORT version 4.4
TEX
1022 version 117B
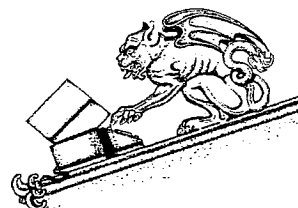
Using Test Versions of Software

— *Kay Sandacz*

Test versions of a variety of programs are available on Chip. New versions of current production programs, such as FORTRAN and SORT, are made available for user testing prior to their installation. This allows users to modify their own programs to conform to any changes in the new version. Some additional programs under consideration for Computation Center support are also available for testing.

The TEST program facilitates the use of various programs that become available for testing by eliminating the need for the user to DEFINE his own logical names. To access the TEST program, enter 'test' at the TOPS-20 prompt. Commands may also be given without entering the TEST program, as in 'test 1022.'

Commands used in the TEST program are:

ALL	Test all of the available programs
HELP	Display basic information about the test program
LIST	List the programs you are currently testing
NO *prgrm*	Stop testing *prgrm* (a program name)
NONE	Stop testing all programs
WARN *prgrm*	Print any warning messages that may exist concerning *prgrm* (a program name)
prgrm	Adds *prgrm* (a program name) to the list of programs being tested

Programs that are currently available in test mode only are:

FORTRAN-20 version 10
MINITAB version 5.1

Tips on Using the SETUP Program

The SETUP program on Chip informs TOPS-20 about various characteristics of your terminal so that the system can make use of them during your session. Memo 2051 documents the program more fully, but a few features that may be useful are not mentioned there.

A tip for people who sometimes mistype things:

SETUP is structured so as to make life easy for those of you who normally log in from one particular terminal, but who occasionally log in from a different terminal type. If A.USER has the line SETUP C108 in her LOGIN.CMD file, then whenever she logs in normally, TOPS-20 knows she's using a Concept-108. If, however, one day she feels called to log in from a VT100 (or a VT100 emulator), typing

LOGIN A.USER <password> VT100

allows her to supply the VT100 argument to the SETUP program at login time by entering it in the account field. In that case, the SETUP program would ignore the C108 argument it was given in the LOGIN.CMD, and instead use the VT100 argument it found in the account field.

The above information is detailed in Memo 2051. What isn't mentioned, however, is what to do if you mistype the account field when you log in. The SETUP program will always ignore an argument

you give it on the command line if it finds something it recognizes in the account field. So if you've supplied the wrong terminal type in the account field, you won't be able to override it directly using the SETUP program itself. You could always log out and log back in again, hoping to type more accurately. But what would probably be more convenient would be to use the TOPS-20 SET ACCOUNT command to set the account field to the proper terminal type, and then run the SETUP program again.

A tip for people who sometimes get detached from their terminal session:

A feature has recently been added to SETUP to make it more convenient to use when ATTACHing to a previously DETACHed session. Suppose A.USER is logged on and using a full-screen program, such as Muse, when her modem accidentally hangs up her line. If she reconnects to Chip within a few minutes, instead of logging in fresh, she can ATTACH to her old session. TOPS-20 will remember that she was using Muse, and Muse will remember all of the changes she'd made to her files. However, TOPS-20 won't remember what terminal she was on. So if she simply CONTINUEs, her screen will look really awful as Muse tries to use terminal features which TOPS-20 has forgotten all about. Instead, she'll probably want to use the SETUP program before CONTINUEing Muse, to remind TOPS-20 about her terminal. In the past, running the SETUP program would have erased TOPS-20's memory of her Muse session, and consequently ATTACHing and reminding the system about her terminal would have done nothing towards saving her work. However, with the recent improvement to the SETUP program, A.USER, who has been detached, can now ATTACH, run SETUP, and CONTINUE right where she left off.

New Version of 1022 Now Available for Testing

— *Kay Sandacz*

Version 117B of 1022 is now available for testing on the DEC-20. Users of the current version of 1022 should experience no difficulty in using the new version. There are, however, several new features in version 117B, including:

> Enhancements to the INIT and PRINT commands, enabling users to write 1022 data directly to files in Lotus 1-2-3 worksheet format or Data Interchange Format. Such files can be directly downloaded to a personal computer.

> Wildcard matching in the FIND, SEARCH and SELECT commands, allowing users to form selection sets based on partial text attribute values.

> Record-level locking, reducing contention for the dataset.

> Debugging tools for PL1022 programs, allowing the user to display and alter values in a program during execution.

Documentation for the new version of 1022 is available through DOCLIST by requesting N1022REF for the Reference Manual or N1022HL for the Host Language Manual.

All users of 1022 should test their programs and files with the new version (see the article on the TEST program in this *Newsletter*). Any problems should be reported to the Program Advisor at 962-7624 or by MM to Staff.Advisor.

PYRAMID/UNIX

Line by line C tracing facility in ATT universe
Curses package available in ATT universe
Shell performance improved by 25% in ATT universe
Remote Procedure Call facility in UCB universe

Building the Pyramids

— *Ron Rusnak*

The Computation Center will be upgrading sphinx, the Pyramid 90x, to a model 98xe with an additional 4 Megabytes of memory and faster I/O processors for disk, tape, and ethernet. Similar upgrades are being made on the Computer Science Department's Pyramid, anubis. These upgrades will provide an increase in CPU power of about 25 percent, and an increase of I/O throughput of between 150 and 200 percent. The increased memory size will reduce paging delays by more than 50 percent. These improvements will have their greatest effect near the end of semesters when usage is at its highest; however, improvements in compilation times and throughput of lisp and apl programs should be seen immediately.

Prior to the hardware upgrade, we will be installing the latest release of the Pyramid OSx operating system, Release 3.1. This is a requirement for the I/O processor upgrade and additionally provides increased functionality and performance. The following is a partial list of changes in the new release.

> AT&T's System V, Release 2, Version 2
> New version of Cron Facility
> Record and File Locking
> New version of uucp communication facility
> New Library Functions for ATT universe
> Simultaneous profiling of multiple processes in ATT universe

Archiving Pyramid Files

— *Eric Nelson*

In the near future, procedures for archiving files from locked accounts on the Pyramid will change. As overall archiving policies are defined, the times described below may be changed; this is a first step in revising current policies and procedures. Presently these files are archived once every two weeks, then dumped to tape. The new procedure will archive files from locked accounts each night during the time when the accounting programs are running. If the project which owns a directory has been locked, the files from that directory will be moved to the archive directory */arc*. If this results in an empty directory, the directory will be removed. Files from the archive directory will be moved to an archival tape every second week, as is currently done.

Files which have been moved to the */arc* directory will be there from two to four weeks. During this time, restoration of the files will be simple. The files can be moved from the */arc* directory back into your own directory. Since you cannot assign ownership to a locked project, the ownership will effectively change to an active project. Archived directories can be easily found in */arc* because the complete path is recreated when the directory is moved. For example, if the directory */u1/byte/papers/bio* is locked, the archived files from that directory can be found under */arc/u1/byte/papers/bio*. They can then be copied back to the home directory using the *cp* command.

In the rare case where a path is extremely long, or other problems occur in the creation of the files in the /arc directory, each file can be found in /arc/u1/byte/AR.filename.number, where *filename* is the name of the file, and *number* is a unique identifier for that file.

When the files in /arc are moved to tape, they are removed from the archive directory, and restoration will be more difficult. For more information you can consult the man page for *archive*.

Usenet Manners

— Melinda Shore

News is one of the more popular systems on our Unix machine, sphinx. Not only are people reading incoming articles, but a surprising number of users are posting articles to Usenet as well. During July, sphinx was ranked 25th of some 3700 sites in total volume (in bytes) posted to the net. Here are some guidelines, provided by the Usenet community, to keep in mind when posting:

- Deciding to post
    - Do not repeat postings
    - Do not post anything when upset, angry, or intoxicated
    - Be sure your posting is appropriate to Usenet
    - Do not post other people's work without permission
    - Don't forget that opinions are those of the poster and not his/her company
    - Reply to postings via mail as often as possible
    - Do not post personal attacks

- Where to post
    - Keep the distribution as limited as possible

- Do not post the same article twice to different groups
- Do not post to mod., or net.announce newsgroups
- Do not post to net.general
- Ask someone if you can't figure out where to post your article
- Watch out for newsgroups which have special rules about posting

- Writing the article
    - Write for your audience
    - Be clear and concise
    - Compose your "Subject:" line carefully
    - Proofread your article
    - Be extra careful with announcements of products or services
    - Mark postings which spoil surprises
    - Rotate offensive postings
    - The shorter your signature, the better
    - If you must use sarcasm, mark it with a smiley (':-)') or another device

These guidelines were taken from "How to Use USENET Effectively," by Matt Bishop, NASA Ames Research Center. The entire text is available online as /usr/local/doc/news.manners. Interested users may also wish to read /usr/local/doc/news.howto ("How to Read the Network News," by Mark R. Horton, AT&T Bell Labs).

Don't let this list intimidate you. The net is a valuable and entertaining resource, and was meant to be used. If you have questions, send mail to newsuser@sphinx.
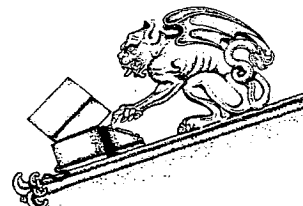
MICROCOMPUTING

Micro Distribution Center Update

— David Davoust

New Vendors, New People, New Services, New Prices!

The Micro Distribution Center (MDC) is undergoing major changes. In the past several months we have added a variety of new vendors, including AT&T, Microsoft, Lotus, WordPerfect and U.S. Robotics, and new products and services are actively being considered.

We have additional staff including a new manager, and new services are available such as on-site service contracts for most MS-DOS equipment. We also hope to begin a delivery service this fall.

With the acquisition of additional storage space, the MDC is now able to maintain modest inventories of major products of vendors such as Apple, IBM, AT&T, Zenith and Hewlett-Packard, so delivery times are shorter.

You can meet with our vendor representatives at special events this fall. The MDC will be hosting several product fairs and will be taking part in the Bookstore Electronics Fair; watch the *Maroon* for details.

We are also working towards opening an MDC storefront early in the fall quarter. At that time, the sales staff will be able to show you the equipment and help you decide what hardware and software will best meet your needs; no appointment will be necessary.

If you haven't seen our pricelist lately, you haven't seen our pricelist. Most prices have been reduced, and we will have a configuration brochure available early fall quarter which will compare all the major systems which we sell to aid you in making the best decision and getting all the equipment you need. You can get a copy of the pricelist from the Computation Center receptionist (third floor of 1155 E. 60th Street), at Usite, or at the MDC in the basement of the Graduate Student Residence Hall (1307 E. 60th Street).

If you have special needs or questions, feel free to call the MDC at 962-6086, the MDC Manager, David Davoust, at 962-6198, or the MDC Administrative Coordinator, Joyce Morris, at 962-6082.

Apple Support Coordinator Program

— Bill Sterner

In order to help out with the growing need for trained support staff in offices and work group clusters of any sort, Apple Computer has created a training program called the Apple Support Coordinator (ASC) program. This program consists of a full day of training on how to use resource materials to solve the problems that work groups encounter. During the day's instruction, the Apple trainer will introduce staff to a Support Training Library, the use of AppleLink (an online reference and technical service available to Coordinators), and various additional materials. The ASC program costs $150 per person. The Support Training Library is included in the training package; AppleLink is available for an additional fee based on usage.

This program is designed to help work groups solve for themselves technical problems they en-

counter with the use of their Macintosh computers. The suggested model is that work groups designate one of their members as an Apple Support Coordinator who can then learn more about their specialized applications and establish links to other sources of support such as Apple Computer and the Computation Center. The Support Coordinator then becomes someone capable of solving many problems locally, and a clearing house for solving more difficult problems.

Anyone interested in attending such a training program should contact Bill Sterner at 962-7172.

Microcomputers on Campus

"Microcomputers on Campus" is the first publication of what we hope will become a regular column in the Computation Center Newsletter. Microcomputers have had a substantial impact on the academic and administrative functions of the University. Four years ago there were approximately 500 micros on campus; today there are over 5000 and the number is increasing. More important than the number of boxes is the fact that the increased sophistication of today's microcomputer systems has brought imaginative solutions to challenging research, teaching, and administrative activities and problems. This column will provide a forum for sharing selected experiences, bitter and sweet, of faculty, students, staff, and departments. The column's success depends on your contributions and we encourage interested parties to contact the Newsletter editor (962-7169) or George Bateman (962-7174 or Staff.Bateman@chip.uchicago).

Our first contributor, William Wimsatt, Professor of Philosophy and Biology in the College, describes how microcomputer technology, from the electronic calculator to the Macintosh, has affected his teaching and research.

I came fairly late to computers. Although I studied engineering as an undergraduate and worked for a year in industry, that was in 1959-63, and the most complicated computational resource I used (beyond the then ubiquitous slide rule) was an old mechanical Frieden. This was a large, expensive, noisy, cumbersome machine — a slower equivalent to a modern 4-function calculator which cost half as much as a car. I moved into philosophy before working engineers saw anything of the then arcane and monstrous machines used by the lucky few who had access to one and could master the art of programming when Fortran was still a dream. Massive calculations were very labor intensive, and tended to be riddled with errors that you always hoped would roughly cancel out.

Perhaps because of the memory of such calculations, in 1975 (with no earthly use for one), I bought one of the first programmable calculators. It was a Hewlett-Packard HP-25, and it was love at first sight. In order to explain to people why a philosopher should spend $200 and 25% of his time (in that first year) playing with a little machine, I said that it was essential for population genetics, which I study and teach (and learn, which I did much better after I could write simulation programs for the mathematical models which I study.) I graduated through two more Hewlett-Packard programmables, got the College to buy some, and incorporated simulations using them in a teaching lab for my common core biology course. What was originally a challenging recreation (can you do anything interesting with 8 memory registers and 49 program steps on reverse Polish notation?) had become professionally relevant. Students with strong math backgrounds used to be bored at my simplistic explanations of the equations, while hard core humanists would freak out. Now both enjoyed playing with the calculators, each at their own level. Demands for more speed and power led me to buy a Sinclair ZX-81 in 1981, and in 1982 a grant brought me a Corvus Concept, one of the very first Motorola 68000 machines, on which I learned to program in (compiled) Pascal and to do much larger simulations.

The advent of the Macintosh and MacPascal in 1984 led me to begin serious work on writing simulations in population biology for classroom use — MacPascal provides an ideal environment for

neophyte users and programmers, among which I included myself and most of my students. After struggling with Pascal on a mainframe, this spring for the first time students in my courses did Macintosh simulations for class. (I demonstrated them in the Computation Center's computer classroom, and students did their own simulations on the Macintoshes available at the University's various cluster sites.) While there were still many rough edges, I think that the experience was positive for almost all, and very positive for quite a few. Students enjoyed learning to use the computers (which, with the Macintosh, is not a threatening experience), and I have been able to present and discuss models which would normally not be accessible to beginning students — models normally taught for the first time to advanced undergraduates or graduate students in biology. Macintosh graphics are very effective in giving a qualitative understanding of the behavior of these models, especially when students can sit at the computer and try out different options to see what happens under different conditions. Those who knew enough to be able to modify my programs or to write their own achieved a still deeper understanding of how these models work.

Programmable calculators and, more recently, the Macintosh have proven to be essential to my own research. I have learned new things from every "teaching" program I have written, and pictures from MacPaint, MacDraw and these programs now grace almost every paper I write. More recently, Jeffrey Schank and I have undertaken simulations of a new order of complexity written in ExperLisp, a compiled Lisp for the Macintosh, of the evolution and behavior of gene control networks. These run amazingly fast (20-30 times faster than on a small and already obsolete minicomputer that a colleague used initially), and we are able to do many things which only a few years ago would have required a minicomputer or mainframe. These are research programs (they take several hours to several days to run) but their fruit has already appeared in my teaching, and in the meantime a number of my students have become as addicted to computers as I am. As an unanticipated side benefit, they spend much more time around the office as we talk about research problems and demonstrate them on the computer. The resulting experience is more like the supportive one of a scientific laboratory than the more characteristic "frequent" weekly meetings

(often only with dissertation students) in the humanistic disciplines. Perhaps that is the most satisfying consequence of a thoroughly delightful experience. I'd rather lose my library (or at least about 90% of it!) than my computer, but happily, I can have both.

Microcomputer Clusters on Campus

There are several departments on campus which have established their own computing clusters. As we receive information on them, we will pass it along to you so that you can take advantage of all the various facilities on campus.

The Humanities Computing Facility

The Humanities Computing Facility will, when completed, include 10 Enhanced 512K Macintosh computers with external disk drives, and 2 IBM-PCs, all of them connected via an Appletalk network to dot matrix and laser printers. It will be possible to print IBM-PC files on the laser printers, either directly through the network, or by first converting these files to Macintosh format and copying them to a Macintosh disk.

The Appletalk network will be connected in turn (through the Kinetics Fastpath gateway) to a local Ethernet network and a Sun 3/160 fileserver. It will be possible to log directly onto the Sun from any of the microcomputers in the Facility, or over the telephone using a modem and terminal. The Appletalk/Ethernet connection will provide print spooling and electronic mail to the microcomputers; it will also be possible to run microcomputer applications directly from the Sun's disk. Used as a freestanding computer, the Sun will house literary and bibliographical databases such as ARTFL and the Thesaurus Linguae Graecae.

The Facility, located in Classics 14 and 19, will be

staffed approximately 12 hours a day, 7 days a week. All users of the Facility will pay a uniform quarterly fee and a per-page charge for printing (amounts to be determined). Class and individual accounts on the Sun fileserver will be assigned according to need.

The Chemistry Microcomputer Cluster

At the request of the Department of Chemistry, the University is creating a microcomputer cluster in the Crerar Library initially consisting of six IBM-PCs and two Macintosh-Plus microcomputers. The cluster will be located in the microfilm reading area on the first floor of Crerar. Software will be checked out in a manner similar to that of reserve materials — students will obtain diskettes containing the appropriate programs from the reserve librarian for use at the cluster.

The cluster is not intended for word processing (thus there are no printers), and priority will be given to students and faculty in the Chemistry Department. It is expected that during the coming academic year, a very useful collection of software suitable for supplementing advanced chemistry courses will be accumulated.

Tapping the Resources of Public Domain Software for the Macintosh

— Gary Buchholz

Few people are aware of the wealth of public domain software for the Macintosh maintained by the Computation Center on sphinx and on the DECsystem-20. All of this software is available to the general user community.

What follows is a short description of the procedure for downloading this software to the Macintosh. Due to the space constraints of this article, two concrete examples must suffice. The downloading process will be more fully documented in a forthcoming Computation Center memo.

For the purposes of these examples, it will be assumed that the user is already familiar with Unix, DECsystem-20, Macintosh, and the use of MacTerminal and MacKermit.

Where to look for Macintosh public domain software:

Sphinx
USENET Newsgroups: mod.mac.binaries
                            mod.mac.sources
                            net.sources.mac
(Accessible through rn, vnews or readnews)

/usr/sun/mac/news_src/
(Software in subdirectories by category, i.e., Desk_Acc, Games, Utilities, Applications, Languages, Musicworks, etc.)

DEC-20
DS2:<MICRO.MAC>00-CATALOG-OF-FILES
(This is a partial annotated listing of the contents of DS2:<MICRO.MAC>.)

Download Procedures

Due to restrictions imposed by communication protocol, all Macintosh software which originated as a binary application or desk accessory has been processed by a BinHex utility. The purpose of the application of this utility is to transform the binary code to printable ASCII, thus eliminating the possibility of a confrontation between the data to be transmitted and the transmission protocol itself.

Complex applications consisting of many parts may have been bundled by their authors with a utility called PackIt prior to BinHexing. This will add a slight, but not insurmountable, complexity to the download procedure.

For the purposes of illustration, downloading a PackIt and BinHex file from the mainframe to the Macintosh will be demonstrated.

Example <u>1:</u>

Machine:
  sphinx to Mac

Source:
  usr/sun/mac/news__src/Demos/bounce.hqx
(Rotating patterned bouncing ball in 3-space from USENET distributed by Boston Computer Society)

Software:
  Mac running MacTerminal
  /usr/sun/mac/bin/xbin (download --> binary)
  /usr/sun/mac/bin/macput (binary --> Mac)

Doc:
  Consult man pages on xbin, macget, macput

<u>Procedure:</u>

1.   Logon to sphinx with MacTerminal. Make sure the file transfer protocol of MacTerminal specifies MacBinary.

2.   Copy the software to be downloaded into your directory.

    cp /usr/sun/mac/news__src/Demos/bounce.hqx
    bounce.hqx

    (When entered, this command should be typed on one continuous line.)

3.   Convert the BinHexed file back to binary.

    /usr/sun/mac/bin/xbin -v bounce.hqx

    (Note: At this point 3 files will be created with the extensions .data, .rsrc, and .info. The first two represent the DATA and RESOURCE forks of a typical Macintosh application. The .info file contains control information necessary to rebuild the original Mac Application name and supply creator signature and file type information. If the generated files have "pit" preceeding these file extensions, this indicates that the application has been bundled by the PackIt utility.)

4.   Transfer the files to the Mac with macput through MacTerminal. The previous step has told us that the Mac application name is "Vanlandingham" and the files Vanlandingham.{ info,data, rsrc} have been created under our working directory.

    /usr/sun/mac/bin/macput Vanlandingham

5.   Done. You may QUIT MacTerminal and double-click the Vanlandingham application icon.

Example <u>2:</u>

Machine:
  DEC-20 to Mac

Source:
  ds2:< micro.mac > microemacs.hqx
   (Emacs for Mac)
  ds2:< micro.mac > utility-packitll.hqx
   (Packit Utility)

Software:
  Mac running MacKermit
  BinHex 4.0 utility on the Mac
  PackIt // utility on the Mac

<u>Procedure:</u>

1.   Logon to the DEC using MacKermit.

2.   Use Kermit on the DEC to send the files. After typing the Kermit-20 SEND command, select the "receive file" option from the FILE menu on MacKermit. Do this for both files as illustrated below.

```
@kermit
TOPS-20 KERMIT version 4.2(253)
Kermit-20 > send ds2:< micro.mac > microemacs.hqx
```

(choose "receive file" from the FILE menu on MacKermit and receive the file)

```
Kermit-20 > send ds2:< micro.mac > utility-packitll.hqx
```

(choose "receive file" from the FILE menu on MacKermit and receive the file)

3.   On the Mac, launch the BinHex utility to convert the hqx files.
     A.   Choose "upload to application" from the FILE Menu.
     B.   Select the document to be converted.
          1)   PackIt // will go directly to an application.
          2)   Emacs will go to a PackIt bundled file.

4.   Launch the PackIt utility to convert the Emacs bundle.
     A.   Choose "unpack files" from the FILE Menu.
     B.   Select Emacs.pit as the file to be unpacked.

5.   Done. You may double-click the microEMACS icon to launch the application. Double-click the emacs.doc document to launch microEMACS and view the User's Guide.

Additional Notes:

•   The unix shell script "puthex" in /usr/sun/mac/bin/ can accomplish both xbin and macput in one operation.

•   Software coming across USENET is often in multiple parts. These must manually be pasted together, removing mail headers from subsequent parts.

•   Inspecting the first few lines of the file past the mail headers will usually indicate the utility and version of the utility that created the file.

•   "xbin" on sphinx is smart enough to discard mail headers from hqx files. BinHex 4.0 on the Mac is not. Therefore, mail headers and signatures must be removed manually from hqx files prior to conversion to an application if this is done on the Mac.

•   The BinHex 4.0 utility is available in /usr/sun/mac/news_src/Utilities if you are a MacTerminal user. Users with communications packages that do not support the MacBinary file transfer protocol should contact a local Mac user group for a copy of this utility.

•   For the purposes of illustration, BinHex and PackIt were used "manually." hqx and pit files have creator signatures identifying the appropriate application to be used for conversion or unpacking. Therefore, double-clicking the hqx file or pit file will automatically launch the appropriate utility.

PC T_EX

— Steve Upp

The Computation Center Microcomputer Demonstration and Development Lab has recently tested PC T_EX version 1.50F for the IBM XT/AT. PC T_EX, implemented by Personal T_EX Inc., is a sophisticated document formatting system used to produce high-quality typeset output, especially with mathematical text. An example of PC T_EX mathematical output is shown at the end of this article. PC T_EX is a faithful implementation of the mainframe T_EX originally developed by Donald Knuth at Stanford University and recently installed on the Computation Center's mainframe systems. (See the article on mainframe T_EX in this *Newsletter*.) The PC T_EX package was tested with three other packages: LaT_EX, DVILaser/PS, and Preview. An IBM XT or AT with at least 512K RAM and more than 10 Megabytes of fixed disk storage is required for the use of PC T_EX, LaT_EX, and DVILaser/PS. Preview also requires the use of either a Hercules Graphics Card, IBM Enhanced Graphics Adaptor, Tecmar Graphics Master Card or an Olivetti Monochrome Graphics card and the appropriate monitor, in order

to operate correctly. The Demonstration and Development Lab used an Everex (Hercules compatible) graphics adaptor with an IBM Monochrome Display.

LaTeX is a superset of commands added to PC TeX which gives the user powerful and more easily remembered commands. LaTeX includes preset formats or document styles for letters, reports, and book chapters, along with ACM and IEEE conference two-column style text.

As output, PC TeX generates a device independent object file. The program includes drivers to print to Epson compatible dot matrix printers. DVILaser/PS is an extra package also tested with PC TeX that allows the use of a high resolution laser printer to produce high quality output. DVILaser/PS includes a printer driver that reads the PC TeX output and generates a PostScript command file which can then be sent to an Apple LaserWriter printer or any other PostScript printing device. The 300 dot per inch TeX Modern fonts are included in the DVILaser/PS package and are downloaded to the LaserWriter to produce the typeset quality output.

The Preview program takes as input the device independent object file and displays it, in its final typeset form, on the screen. Preview uses the entire PC screen to display the text, and includes such useful features as the ability to magnify parts of a page in order to see the detail of the typeset text.

The following example of PC TeX output was created using the Apple LaserWriter and then scanned using the Graphics Input Scanner to become a part of this *Newsletter*.

$$\frac{dq_i}{dt} = -f_{ii}^0 \left(q_i^0 + \Delta q_i\right) - \sum_k \frac{\partial f_{ii}^0}{\partial q_k} q_i^0 \Delta q_k$$

$$+ \sum_{j \neq i} f_{ij}^0 (q_j^0 + \Delta q_i) + \sum_{j \neq i} \sum_k \frac{\partial f_{ij}^0}{\partial q_k} q_j^0 \Delta q_k + I_i$$

SAS-PC Update

— Don Goldhamer

SAS for IBM-PC (and compatible) Microcomputers

SAS Institute, Inc. has released PC-DOS versions of its data manipulation and analysis programs. The Computation Center administers, with the help of various departments and divisions, a University-wide site license for the use of the programs by University faculty, staff, and students on microcomputers owned by the University. Unfortunately, the license does not allow the distribution of SAS programs to individuals, nor does it presently allow use of the programs by students at home.

The programs are grouped into ten separate products, which were described in the Spring 1986 *Newsletter*. The University has purchased two products thus far — SAS/BASE and SAS/STAT. Each of these products is available at a cost of $40 through departmental or divisional offices.

New SAS products are brought into the Computation Center's Microcomputer Demonstration and Development Laboratory (at 1155 E 60th Street), and copies are also made temporarily available to interested users for evaluation. We urge that people coming to the Laboratory to evaluate SAS products have some familiarity with the SAS system (perhaps from mainframe use) before arriving.

SAS/IML (Interactive Matrix Language) is now available for <u>evaluation</u> (until October 15), and inquiries are welcome. The Center also evaluated SAS/RTERM, but found insufficient interest in the product to warrant its purchase at that time. A new, limited licensing arrangement by SAS Institute for ten copies of a product at a somewhat lower rate may make it possible for the University to purchase

some products for smaller audiences.

Those who have purchased use of a SAS product are notified of new releases (and updates to older versions) through their department's contact person, who also distributes the products. The Center is exploring methods of allowing purchased copies of SAS products to be downloaded from our mainframe computers to users' microcomputers, thereby eliminating the time-consuming task of copying dozens of diskettes.

Probably the most efficient use of SAS-PC products for large analyses is through prototyping the analysis on the PC, and then running the analysis of the entire data on the (faster) mainframe. This process is simplified by use of the SAS RLINK product (part of SAS/BASE) which was described in the Center's Summer 1986 *Newsletter*. The SAS Technical Report P-144 describes how to tailor your SAS micro-mainframe link for your convenience.

For further information about SAS-PC products, please contact your departmental office or Don Goldhamer, Manager of Applications Systems, at 962-7166.

Micro-Mainframe File Transfer and Communications

— *Dorothy Raden*

Kermit is the file transfer software currently being supported and distributed by the Computation Center. The diskette and documentation are available for $15.

Kermit Availability

The following versions of Kermit are available at the Computation Center Business Office, 1155 E. 60th

Street, Room 336.

- Apple // DOS
- Apple // CP/M with Super Serial or California Computer Systems 7710a cards
- Apple Macintosh 128/512/XL/Plus
- Hewlett Packard 150
- IBM PC/XT/AT and look alikes such as: Hewlett Packard Vectra, Zenith all models, AT&T 6300, Compaq, Columbia, Leading Edge, etc.
- Kaypro CP/M
- Morrow CP/M
- Osborne CP/M

The following versions are available by special request only:

- DecMate for CP/M
- DEC Rainbow for DOS
- Televideo 803/TPC I

Kermit runs on the Amdahl 5860 under TSO, on the Pyramid and on the DEC-20. Documentation is available on-line through DOCLIST as follows:

R138 *Kermit User's Guide* (KERMITUG)
R138A *Kermit Protocol Manual* (KERMITPM)
R154 *Kermit for TSO* (KERMITSO)

Memo 6000, "Kermit for CP/M"
Memo 6001, "Kermit for the IBM PC/XT/AT/Jr., PC Look-Alikes, and Hewlett Packard 150"
Memo 6002, "Kermit for the Apple //, // +, and //e under DOS 3.3"
Memo 6003, "The Macintosh Kermit"

Copies of the documentation are also available at the terminal clusters and at Regenstein Reserve.

What's New in the Demonstration and Development Lab

— Cathy Kosto

The following new products have been added to the Microcomputer Demonstration and Development Lab, 1155 E. 60th Street. To make an appointment to see any of the hardware or software in the Lab, call 962-7151.

New hardware includes:

APPLE DATA SPACE DS 800 — 800K external disk drive. Can be used on any Macintosh, and does not require booting the disk.

CAUZIN SOFTSTRIP READER — Used with a 512K Macintosh or IBM PC. Reads specially encoded information off paper and puts decoded information onto disk for future referral. Quite useful for reading and storing magazine printed software and data.

EVEREX GRAPHICS ADAPTER — For IBM XT.

GRAPHON 240 — Graphics terminal.

IBM PC CONVERTIBLE — Lap-top PC DOS compatible microcomputer with two 3.5" floppy disks. Also has LCD display.

NETWORK SERVER 142 — A file server and print spooler. Currently connected to the Xerox 6085.

XEROX 6085 — Multi-user system with network software/hardware. 1.5M RAM, 20M hard disk, single floppy disk drive, mouse-driven with icons, large monitor screen with 1024 x 750 resolution, runs ViewPoint and MS-DOS.

ZENITH 158 — IBM XT compatible running at 8 Megahertz (faster than the IBM XT). Has 256K RAM and two floppy disk drives.

ZENITH 241 — IBM AT compatible with 20M hard disk. Also has 512K RAM.

The following is a list of the new software which has been added to the Lab.

For Macintosh computers:

BASIC INTERPRETER VERSION 2.10 by Microsoft.

COLOR PRINT VERSION 2.0 by Esoft Enterprises.

CRICKET GRAPH by Cricket Software — A charting program which makes business and scientific graphs.

EASY 3D by Enabling Technologies Inc. — Three dimensional graphics software demo disk.

FILE VERSION 1.02 by Microsoft.

FORTRAN VERSION 2.10 by Microsoft.

FULLPAINT by Ann Arbor Softworks — This is an enhanced paint package with more features than MacPaint.

HELIX VERSION 2.0 by Odesta — Database system.

LOGO VERSION 1.0 by Microsoft.

MACAUTHOR by Edudisc — Allows you to prepare interactive coursework for teaching purposes.

MACCHEMISTRY by Southern Software — A study aid for Chemistry. It can simulate acid-based titrations.

MACDRAFT by Innovative Data Design, Inc. — Drafting package for doing engineering drawings and layouts on the Macintosh.

MACPASCAL VERSION 2.01 by Apple.

MULTIPLAN VERSION 1.10 by Microsoft.

RASCAL COMPILER/DEVELOPMENT SYSTEM by Reed College — Programming language system for doing real time applications.

STATVIEW by Brainpower, Inc. — Statistical package.

STATWORKS by Cricket Software — Statistical package.

STAT80 by Statware — Statistical package demo.

STELLA DEMO DISK by High Performance Systems — Graphic model simulation tool.

TOOLS FOR WRITERS DEMO DISK by Eva M. Thury.

TOPS by Centran Systems West — Allows file sharing between two different types of computer systems, such as both Macintosh and IBM PC systems running on AppleTalk.

For the IBM computers:

C VERSION 3.0 by Microsoft.

CDEX — The Expert Series Program for dBase III/III+.

DATAEASE VERSION 2.5 by Software Solutions Inc.

DBASE III PLUS VERSION 1.0 by Ashton-Tate.

FLIGHT SIMULATOR VERSION 2.12 by Microsoft.

MINITAB by the Minitab Project.

PC OUTLINE — Public domain.

PC TEX by Personal TEX Inc. — Document formatting used on an IBM PC to produce high quality typeset output.

PROJECT VERSION 2.01 by Microsoft.

TOPS by Centran Systems West — See description under Macintosh computers.

For the Apple //e computers:

APPLE //E INSTANT PASCAL DEMO DISK by Apple — Pascal language demo disk.

COMPUTER LAB FOR CALCULUS DEMO DISK by the Math Lab — Educational software suitable for an introductory calculus course.

Since the *Newsletter* is published quarterly, we recommend using the MICLAB program on the DEC-20 to obtain up-to-date information about hardware and software in the Lab. Using the "new" option, you may limit the display to hardware and software acquired within the last month or week. A complete listing of all hardware and software can also be obtained through MICLAB, or copies are available from the 3rd floor receptionist at the Computation Center, 1155 E. 60th Street.

DEPARTMENTS

People

People who have joined the Center:

Farhad Anklesaria has joined Applications Systems as a Programmer/Analyst. **Kathleen Chattin** is a new Data Control Clerk. **Stephen Daiter** has rejoined the Center as a Cluster Attendant. **David Davoust** is the new Manager of the Microcomputer Distribution Center. **Peter Han** and **Kathleen Lively** are Stock Clerks in the Microcomputer Distribution Center. **Marc Jacobson** is a new Demonstration Laboratory Assistant in the Microcomputer Demonstration and Development Laboratory. **Raymond McNair** has joined the Center from Physical Sciences as a Stock Clerk.

Transfers/Promotions within the Center:

John Iannantuoni, Associate Director for Operations and Technical Services, has been named Acting Director of the Center (see separate article in this *Newsletter*).

Earl Alexander, Stock Clerk, has become a Junior Electronics Technician. **Thomas Barron**, Programmer/Analyst in Business Services has become a Systems Programmer. **Charles Blair** has been promoted from Analyst to Jr. Programmer/Analyst I in Library Systems. **Laura Cuzzillo**, Supervisor of Production Services, has transferred to the position of Assistant to the Project Administrator of the University's Payroll/Personnel Project.

Samuel Gassel has been promoted from Cluster Attendant to Student Program Advisor. **Joseph Golas, Jr.**, **Susan E. Kerr** and **Bruce Lacey** have been promoted from Jr. Programmer/Analyst II to Programmer/Analyst in Library Systems. **S. Frederic Johanson** has been promoted from Lead Programmer/Analyst to Project Manager in Library Systems. **Joel Mambretti** has been promoted from Senior Staff Analyst to Lead Staff Analyst in Information Technologies and New Services. **Kathryn Sandacz** has been promoted from Programmer/Analyst to Senior Programmer/Analyst and has joined the Business Services Group. **Stuart Schmukler** and **Melinda Shore** have been promoted from Jr. Programmer/Analyst II to Programmer/Analyst in Applications Services. **William Sterner** has been promoted from Lead Staff Analyst to Project Manager in Information Technologies and New Services. **Rebecca Wilson** has been promoted from Jr. Programmer/Analyst I to Jr. Programmer/Analyst II in Library Systems.

People who have left the Center:

Carolyn Autrey-Hunley, Director, has left to accept a position at the University of Michigan as Associate Vice Provost for Information Technology and Director of the Computing Center (see separate article in this *Newsletter*).

Stephan Alexander, Computer Operator, has left the University. **Francis Anton**, Cluster Attendant and Stock Clerk in the Microcomputer Distribution Center, has also left. **Yvonne Behn**, Documentation Specialist in the Instruction and Documentation Services Group, has left the Center to assist her husband in his business. Also, in Instruction and Documentation Services, **Edward Donner** has decided to devote more time to his dissertation and has reduced his workload from being Cluster Supervisor to that of Cluster Attendant. **Judith Curry**, Data Control Clerk, and **Jaya Gujral**, Student Program Advisor, have left the Center to pursue their studies. **James Lindholm**, Programmer/Analyst in Business Services, has left the University to accept a job teaching Tamil and Tamil studies at the University of Pennsylvania.

Documentation

New Documentation and Major Updates to Documentation

08/29/86 **2052** The DEC/MVS Link
Memo 2052, "The DEC/MVS Link from the DEC Side: The MVS Program," has been updated, both to reflect the elimination of DECsystem-20 Dale, and to bring the descriptions of procedures up to date. This has been an extensive update.

08/27/86 **4275** Backup of Disk Data
Memo 4275, "Backup and Recovery of Disk Datasets," has been updated to reflect the elimination of DECsystem-20 Dale, and to update its descriptions of current backup and recovery policies and procedures.

08/27/86 **4323** DEC-20/MVS LINK from MVS
Memo 4323, "The DEC-20/MVS Link... from the MVS Side," has been updated extensively to reflect modifications to already existing procedures described in the memo.

08/11/86 **R179D** SCRIPT Reference Card
The SCRIPT Reference Summary card includes listings of SCRIPT control words both alphabetically and by function. It also includes a diagram of an output page with the control words used to format it; a listing of SCRIPT options with short explanations; and a section on system set symbols and macros.

07/29/86 **4305** Advanced SuperWylbur Features
This memo was updated to reflect the new features in SuperWylbur such as the extended retry command, the checkpoint/restore facility, the session logging facility, and features available through VTAM (full screen SuperWylbur).

07/25/86 **4153** Cataloged Procedures for SPSS
The memo was rewritten to describe the use of SPSS-X; information on SPSS version 9 was removed. Also, a large section on SPSS Graphics was added.

07/14/86 **R59B** BMDP Programmer's Guide
This guide is intended as an informal description of BMDP for FORTRAN programmers who wish to write or modify BMDP style programs and for those who wish to convert BMDP to non-IBM systems. Use of this Programmer's Guide assumes basic familiarity with the BMDP programs, especially the control language and BMDP Files.

07/09/86 **4349** Job Reporting System
Memo 4349, "Job Reporting System," describes the Job Detail Reporting macro at the University of Chicago, which can be used to get a complete report of the types and amounts of charges that were accumulated from a project (if you are a project administrator) or for a single logon-id.

06/12/86 **4301** Center-Related Documents
Reflects all changes and additions in Computation Center related documents since 8/26/85.

Minor Updates to Documentation

08/26/86 **4368** Converting SPSSX System Files

08/07/86 **2039** BMDP

08/07/86 **2049** SED

08/05/86 **R102** TREATISE

07/31/86 **2050** MUSE

07/30/86 **2015** SPSS Batch System

07/14/86 **4246** Guide to Software

07/11/86 **4277** Systems & Available Re-
sources

07/10/86 **4346** AMDB

07/10/86 **4313** SWYL Macros & Profiles

07/07/86 **4320** Class Instructors

07/03/86 **4347** Setting Up a Project

07/03/86 **4374** Accessing the Bitnet Net-
work

07/02/86 **4356** Microcomputing at the U of
C

07/01/86 **6003** Macintosh KERMIT

07/01/86 **6002** Kermit for the Apple //

06/20/86 **6001** Kermit for the IBM PC

06/19/86 **6000** KERMIT for CP/M

06/19/86 **2058** WS97

06/18/86 **4270** Comp Ctr Online Documen-
tation

06/03/86 **R81A** SuperWylbur Text Editing

New in the MVS Notice File

09/10/86 **COB2** New Version of Cobol

08/27/86 **COB1** New TSO COBOL Prompt-
er Installed

08/26/86 **SPSS23** New Version SPSSX to
SAS Macro to be Installed Today

08/22/86 **TRT12** JU = NO now default

08/20/86 **SAS24** SAS 5.16 is here & will
become Production 8/27/86

08/18/86 **SIMS2** Are you doing discrete
simulation programming?

08/18/86 **SIMS1** SIMSCRIPT II.5 Release
9.4 Up for Test

08/12/86 **SAS23** SAS/ETS & SAS/GRAPH
Bugs

08/05/86 **IMSL3** IMSL available to VS-
FORTRAN

07/31/86 **SWYL24** Limit on Number of SET
COMMANDS Allowed

07/01/86 **IMSL2** IMSL version 9.2 in pro-
duction on 7/7/86

06/13/86 **SWYL23** SuperWylbur will no
longer accept illegal dataset names

06/13/86 **SWYL22** Recent changes to
SuperWylbur

06/10/86 **XSET5** Important Notice - STEP-
CAT Cards No Longer Needed in
XSET Jobs

06/09/86 **SCRP20** Potential problem with
line length: SYMGR

05/29/86 **STAT8** Multivariance VII is now
available.

05/28/86 **SWYL21** Interactive Bitnet from
SuperWylbur: The TELL Command

05/28/86 **SWYL20** Print & Purge Com-
mands can specify multiple jobs.

New in the DEC Notice File

08/22/86 **TRT7** JU = NO now default

08/22/86 **TEX3** Metafont now available on
Sphinx

08/22/86 **TEX2** Tex v2.0 available on Chip
and Sphinx

07/01/86 **IMSL2** IMSL version 9.2 in pro-
duction on 7/7/86

06/09/86 **SCRP2** Potential problem with line
length in SYMGR

05/21/86 **MTB2** New version of Minitab now
available

05/21/86 **FT1** Binary File Transfer from
Chip

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860, and each of the DEC-20s, Chip and Dale.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization May 1986 - July 1986

Service Provided	Amdahl 5860/MVS May 1986	Amdahl 5860/MVS June 1986	Amdahl 5860/MVS July 1986
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	2:41	2:45	2:32
non-setup jobs	1:27	1:34	1:19
tape setup jobs	20:36	23:10	20:44
Total CPU-hours used	206 hrs 30 min	206 hrs 0 min	180 hrs 4 min
Superwylbur sessions	20,053	21,088	19,501
CPU hours	7 hrs 37 min	8 hrs 45 min	7 hrs 53 min
connect hours	14,018 hrs	14,501 hrs	14,073 hrs
average session	42 min	41 min	43 min
average CPU/session	1.37 sec	1.49 sec	1.46 sec
TSO sessions	3,206	3,716	3,830
CPU hours	2 hrs 31 min	2 hrs 55 min	3 hrs 59 min
connect hours	1,329 hrs	1,508 hrs	1,727 hrs
average session	25 min	24 min	27 min
average CPU/session	2.82 sec	2.82 sec	3.75 sec
Jobs submitted	55,437	54,661	51,659
Steps executed	109,615	108,475	107,141

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown)

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs May 1986 - July 1986

Program	Description	Percent	Count
UCFLBL20	FILEBOL	9.56	33458
SASLPA	SAS	7.40	25890
WYLLIST	SUPERWYLBUR List Offline	7.32	25614
SORT	SyncSort	4.81	16838
IEBGENER	IBM file handling utility	3.88	13564
IEFBR14	IBM utility - null step	3.38	11813
IEWL	Linkage editor	3.31	11570
IBMDEC	IBM/DEC link utility	3.08	10775
IDCAMS	VSAM utility for catalog operations	3.02	10574
SUCCESS	Operating Services utility	2.58	9030
FAIL	Operating Services utility	2.55	8912
MARKYBOL	Systems utility	2.51	8794
SPSSX	SPSS Version X	2.27	7942
PGM = *.DD	User defined routines	2.10	7334
BATCH204	Model 204 run in batch	1.75	6121
IELOAA	PL/I compiler	1.39	4866
MVGDG	Multi-volume tape GDG cycler	1.21	4235
IGIFORT	Fortran G compiler	1.02	3564
MAILXBM	Bitnet mail through SuperWylbur	1.01	3538
SCRIPTW	Script text formatting program	1.00	3501

CHIP - DECsystem-2060 Utilization May 1986 - Jul. 1986

Account Period	May 1986		June 1986		July 1986	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	69.8	4619	57.5	3724	78.8	3885
EVENING	41.2	1229	28.6	688	38.2	601
OVERNIGHT	57.1	1336	42.2	747	79.0	755
TOTAL	168.1	7184	128.3	5159	196.0	5241

Top Twenty Chip Programs May 1986 - July 1986

Program	Description	Percent	Count
OPR	Operator functions	7.45	20826
MM	Electronic mail manager	5.49	15347
PTYCON	Pseudo-terminal controller	4.75	13275
SYSDPY	Operator interface with job queues	4.65	13021
RWHOD	Lists users on ethernet hosts	4.64	12979
WATCH	Generates these statistics	4.64	12979
SYSJOB	System job controller	4.64	12979
NETSRV	Supports ethernet network functions	4.64	12976
MMAILR	Network mail daemon	4.64	12970
IBMSPL	MVS link daemon	4.63	12947
WINDOW	Full screen PTYCON	4.59	12846
BITNET	Off-campus electronic mail network	4.53	12660
SHRSRV	File transfer daemon	4.40	12308
FOONET	Supports mail forwarding between Chip & Dale	4.40	12297
USAGE	Utility to collect program use data	4.30	12015
EXEC	TOPS-20 command processor	4.06	11344
MUSE	Full screen editor	3.67	10262
EMACS	Full screen editor	2.49	6955
1022	Database system	1.97	5520
SENDER	Local mail daemon	1.58	4417

DALE - DECsystem-2060 Utilization May 1986 - Jul. 1986

Account Period	May 1986		June 1986		July 1986	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	72.9	2071	46.2	1953	30.9	1106
EVENING	24.8	607	20.6	416	14.3	203
OVERNIGHT	34.6	680	34.9	518	33.3	296
TOTAL	132.3	3358	101.7	2887	78.5	1605

Top Twenty Dale Programs May 1986 - July 1986

Program	Description	Percent	Count
OPR	Operator functions	7.50	14346
SYSDPY	Operator interface with job queues	6.54	12520
PTYCON	Pseudo-terminal controller	6.50	12442
WATCH	Generates these statistics	6.45	12343
BITNET	Off-campus electronic mail network	6.45	12342
MMAILR	Network mail daemon	6.45	12342
IBMSPL	MVS link daemon	6.45	12342
FOONET	Supports mail forwarding between Chip & Dale	6.45	12341
SYSJOB	System job controller	6.45	12341
USAGE	Utility to collect program use data	6.45	12341
SHRSRV	File transfer daemon	6.44	12327
WINDOW	Full screen PTYCON	6.43	12309
MUSE	Full screen editor	2.71	5185
EXEC	TOPS-20 command processor	2.57	4290
MM	Electronic Mail Manager	2.15	4122
BATCON	Batch Controller	1.86	3563
SENDER	Local mail daemon	1.57	3007
EMACS	Full-screen editor	1.40	2683
1022	Database system	1.28	2453
DEMAND	Data management system	1.27	2430

General Information

Computation Center Administration

Acting Director of the Computation Center	John E. Iannantuoni	962-7616
Associate Director Operations and Technical Services	John E. Iannantuoni	962-7616
Assistant Directors Instruction and Research Information Services	Harold C. Bloom	962-7155
Information Technologies and New Services	George R. Bateman	962-7174
Administrative Information Services	David E. Trevvett	962-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	962-7151
Microcomputer Distribution Center	1307 E. 60th St., Rear Entrance	962-6086
Multi-media Classroom	Harper 406	962-7153
Usite Terminal Cluster	Wieboldt 310	962-7894

Computer Communications Information

Phones	300 baud	1200 baud	2400 baud	4800 baud	9600 baud
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	300 baud	1200 baud	2400 baud	4800 baud	9600 baud	telenet
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	mvs24/vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20	chip	chip	chip	chip	chip	chiptn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	General address form	Example
Amdahl 5860 (MVS)	logonid@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username@chip.uchicago	staff.hal@chip.uchicago
Pyramid 90x (Sphinx)	person-id@sphinx.uchicago	halb@sphinx.uchicago

Telenet dial-in information	Nearest phone number	Network address
	800-336-0437 most states	31236A (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)

Quick Reference Phone Directory

Information
General 962-7151
Machine status 962-7626

Accounts
Billing information & records 962-7158
Opening class accounts 962-7159
Opening PCA and regular accounts . . . 962-7158
Refunds 962-7624

Advice and help
Applications software 962-7624
    Reporting problems
    Suggestions & complaints
Office support systems 962-7174
    Microcomputers
    Terminals
    Word processors

Computer supplies & tapes 962-7159

Custom services
Microcomputer custom services 962-7453
Printing 962-6081
Programming 962-7166

Data entry services 962-7604

Dataset recovery
PCA accounts 962-7159
Other accounts 962-7621

Documentation 962-7452

Magnetic tape services 962-7614

Microcomputers
Appointments for demonstrations 962-7151
Consultation on equipment 962-7174
Custom technical services 962-7453
Purchase of microcomputers 962-6086

New software requests 962-7166

Production jobs & special handling . . 962-7602

Purchases
Computer supplies & tapes 962-7159
Microcomputers 962-6086
Used equipment 962-7615

Repairs
Macintosh microcomputers 962-7663
Terminals 962-7663

Subscriptions to the Newsletter 962-7159

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
_____

City
_____

State _____ Zip _____

THE UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Table of Contents

cepted by a recorded message and then transferred to a University telecommunications operator.

GENERAL NEWS

University Telephone Exchange Changes

— Christophe deGrazia

The University's Direct Inward Dial (DID) telephone exchange will change from 962 to 702 on January 1, 1987. Therefore, callers trying to reach a Computation Center office from an off-campus phone after New Year's Eve should remember to use the new 702 exchange. Note that the computers for the Computation Center are dialed from the outside using 753 exchanges. Those numbers will not be affected by this change.

According to the Office of Telecommunications, altering the DID exchange from 962 to 702 will not only increase the quantity of direct dial numbers available to the University, but will also increase the acoustic quality of incoming calls by transferring them from microwave transmission to land-line transmission.

Although the 962 exchange will be replaced by the 702 exchange on January 1, calls to the University using the 962 exchange between January 1 and March 1 will be automatically connected to the correct University line. The University is billed for this service by Illinois Bell. Therefore, the Office of Telecommunications strongly encourages all callers to use the 702 exchange starting on January 1st.

After March 1, however, such calls will be inter-

Assistant Director for Finance and Administration Named

John Iannantuoni, Acting Director of the Computation Center, has announced that Peter Hayward has been promoted to Assistant Director for Finance and Administration effective November 1, 1986. This promotion was viewed as a recognition of Mr. Hayward's accomplishments and responsibilites since he joined the Center in August of 1984, and as a way to focus the financial, administrative, and business functions of the Computation Center.

Reporting to the Director of the Computation Center, Mr. Hayward's responsibilities will include directing the Business Services group, administering Center personnel issues, preparing the Center's budget, and monitoring income and expenses.

Computation Center Schedule for the Holidays

The Computation Center will be closed as follows for Christmas and New Year's Day:

- All offices in the 1155 building will be closed.

- The Computation Center computers will be shut down from midnight to midnight.

- Usite, Crerar, and Regenstein clusters will be closed.

Computation Center services are scheduled as usual during the interim, except for the following changes:

Business Office (weekdays only):
12/22/86 thru 1/2/87   8:30 am - noon
                          12:30 - 4:30 pm

Microcomputer Distribution Center:
12/24/86 & 12/31/86   10:00 am - 2:00 pm
12/25/86 & 12/26/86   closed
1/1/87 & 1/2/87   closed

Usite terminal cluster:
12/24/86 & 12/31/86   8:00 am - 6:00 pm

Usite Advice Desk
12/24/86 thru 12/26/86   closed
12/31/86 thru 1/2/87   closed

"Your account will be ready tomorrow" — Why It Takes A Day

— *Kathryn Sandacz*

Users of Chip or Sphinx are sometimes painfully aware that there is an overnight delay in making changes on these machines, such as setting up or unlocking an account. This delay is a result of centralizing our accounting system, which simplified accounting procedures for users as well as for the Computation Center. This article outlines our ac-counting system and our plans for future enhancements, including eliminating those overnight delays.

The Accounting Master Data Base, or AMDB, is the focal point of information about the use of our computers. Every person authorized to use our machines is assigned a permanent person-id (PID), stored in AMDB. AMDB also stores projects and associated accounting information: how much money the project may spend, how the money may be spent, and who is responsible for the money. Enrolling a PID in a project authorizes a user to spend the project's money in specified ways. An enrollment may be restricted to certain machines, or to a limited amount of money. All of this information is stored in AMDB.

If the information were only in AMDB, it would be of limited use. Instead, AMDB is updated regularly concerning the activity of each account on each of our computers. The computers, in turn, are informed of the status of each account. Through this exchange of information, the stark detail of who may do what is translated into the actuality of over 2500 logins per day. Here's how it works.

Between 10:00 and 12:00 each night, jobs are run on Chip, MVS and Sphinx, tabulating how much of various resources (such as connect time and disk storage) has been used by each account. AMDB itself resides on MVS, so the data from Chip and Sphinx must be copied to tape, then read onto MVS. Shortly after midnight a job is run which calculates the cost for each user of each resource and applies the amount to the running total in AMDB. If an enrollment has spent more than allowed or has expired, it is locked. As AMDB is updated, accounts on MVS are changed immediately to reflect the new information.

For Sphinx and Chip though, another job must read through the database, extracting information about accounts that use those computers. In addition to new dollar balances or locks, this also includes any accounts to be created, unlocked, or killed. On MVS, such changes were made at the time they were requested. The data for Chip and Sphinx is then copied to tape, read onto the appropriate computer, and acted on. Usually this entire process is complete by 4 a.m.

Longtime DEC users may remember when changes to a DEC account could be made immediately rather than waiting for a nightly tape job. It was also necessary then to allocate money specifically for DEC use, since the DEC kept track of its own money, without reference to any central source. Under that system, it was possible (and even common) for a DEC directory to be out of money although the enrollment to which it billed still had funds. Changes to a DEC account could be made immediately, but they were needed more often.

Not just money allocations, but all accounting information is centralized in AMDB, including authority to make changes. Previously, any change to a DEC account had to be requested at the Business Office. Now, a project administrator can use the interactive AMDB program on TSO to set up an enrollment on Chip or Sphinx, or to unlock an enrollment by extending the expiration date. A student who needs a DEC account for class work can use the CLAIMS program, also on TSO, to allocate money for the course and to create the DEC directory.

When MVS is connected to the campus Ethernet, we anticipate the best of both worlds. A request to create a new account or change a password can be sent immediately to any machine. Accounting information can be consistently maintained in one place and updated where needed. Given the current plan for Ethernet's arrival, we expect to be doing this by the beginning of the next academic year.

Electronic Mail: General Information

— *Eric Nelson*

Getting mail through the electronic maze can often be quite frustrating because of the many networks and the different methods they use for addressing and handling mail. These methods change with what seems to be distressing frequency as one site or another changes how its mail is handled.

Currently, the University of Chicago maintains its own local Ethernet network which connects a number of machines on campus via fiber-optic cables. Both Chip and Sphinx are connected to the Ethernet, as will be MVS in the near future. Using mail within this local domain (known as UChicago) is easy because all the machines know how they send mail to the others. It is also relatively simple to send mail on MVS.

Sending mail outside of the local network becomes a little more difficult depending on the network or domain to which you wish to send it. MVS is our connection to the Bitnet network and to the domains which are known to the Bitnet system. The DEC-20 is our connection to the Mailnet network, but Mailnet is scheduled to disappear in June 1987. Sphinx, via Gargoyle, is our connection to the UUCP network. Using any one of these machines, it is usually possible to send mail to any of the other networks, but it is not as simple as sending something within the network.

In the various machine-specific sections of this *Newsletter* there are articles which give the basic form of address (and return address) for sending mail from one machine to other local machines and to the main networks we use.

Since the field of electronic mail is in constant flux, some problems are encountered when a change is implemented somewhere before word has filtered out about that change. The Notice file and system messages are the best sources of current information on the state of electronic mail as changes are made and we adapt to them.

In this respect, two imminent changes will affect users of electronic mail at the U of C. The first was mentioned above: Mailnet will vanish this coming summer. Only about 20 sites are on Mailnet, and most are on other networks. Sites on Bitnet should present no problems in converting addresses. Some sites, however, will not go onto Bitnet. Therefore, the only sure way to find an alternate route for your mail is to contact the recipient directly and ask what routes are available.

The second change is a large scale transition of Bitnet and other networks, to the use of a domain naming system of addressing. In this method, each domain knows its set of machines and other domains, but does not have to know about the machines within another domain in order to send mail to any given machine in that domain. This avoids the problem of trying to maintain tables at every site which know the site names for all the other networks and domains. Further, the massive number of site names introduces the problem of duplicate site names. For instance, there are two hosts named Sphinx in the United States.

Please understand that mail addressing and mail networks are currently in a state of flux throughout the world. We will be reporting changes in the system as they become effective. If you have questions, please send mail to postmaster on Sphinx, or to STAFF.ADVISOR on Chip, or use the *suggest* command on SuperWylbur, or call the Program Advisor at 962-7624.

Two Major Donations of Computer Equipment

— Hal Bloom

Two computer manufacturers, AT&T and Convergent Technologies, have recently donated equipment and software to the University of Chicago. The Computation Center is playing a major role in the installation and evaluation of this equipment.

AT&T has donated a 3B15 for use by the Division of Physical Sciences. In addition, they have provided an upgrade to Computer Science's 3B5 to make it a 3B15. If, after a period of evaluation, these computers appear to fit into the Physical Science's multi-tiered plan for computing, it is likely that AT&T will increase its donation and that the Physical Sciences will purchase additional 3B15s.

The 3B15 is a mid-range member of the AT&T 3B family of true 32-bit computers running Unix System V Release 2, and supporting applications for 16 to 60 users.

For the initial evaluation, the donated 3B15 will be located at the Computation Center, where Center personnel will install the system software and operate the Computer for the Physical Sciences. The decision to install the 3B15 at the Computation Center was based on two major considerations:

1. The Center already has a suitable environment for the computer and communications to it; and,

2. The Center has expertise in both Unix and networking.

At first, twenty ports on the 3B15 will be connected to the Gandalf. When the Ethernet interface is available for the 3B15, it will be connected to the campus-wide Ethernet.

Convergent Technologies has donated fifteen of their MiniFrame computers to the University for use by the Divisions of Physical and Biological Sciences. The disposition of these computers is being determined by Robert Graves, Associate Provost for Computing and Information Systems, and by the Deans and other members of the divisions.

The first of these MiniFrame computers has initially been installed in the Computation Center's Development and Demonstration Lab. Anyone interested in evaluating the MiniFrame may phone 962-7151 for an appointment. Center personnel are now installing the software and learning the features of the MiniFrame. This computer runs the CTIX operating system, which is fully compatible with Unix System V, and can support up to eight users. The configuration of each of the donated computers includes two terminals, various compilers, an Ethernet board, and a 50Mb Disk.

Unix is a trademark of AT&T.
CTIX and MiniFrame are trademarks of Convergent Technologies Inc.

Computer Systems Reliability

— Mike Willey

The accompanying table shows a comparison of the reliability of Computation Center computers from fiscal year 81/82 through fiscal year 85/86. The number of times that a computer failed and the total hours that it stayed out of service are reported for each fiscal year. The cause of the failure — software, hardware, or miscellaneous — is also shown.

In general, the review shows improved stability for the MVS system. This may be attributed to running a minimally modified MVS system as compared to the heavily modified SVS system which preceded it. Another factor contributing to the improvement was the better error recovery features of the MVS system.

There is also a noticable increase in the total hours that the DEC 2060 has remained out of service. That increase resulted from a reduction in the hours covered on the maintenance contract with Digital Equipment Corporation, a step taken to reduce maintenance costs.

Other factors which affect the interpretation of this table are as follows:

SVS - MVS

Fiscal 81/82: Forty-three percent of the 83 hardware problems were related to SVS's sensitivity to disk problems. At that time, we were running VM with SVS on an Amdahl 470V/7.

Fiscal 82/83: Memory and channels were added and the Amdahl 470V/7 was upgraded to an Amdahl 470V/8. A second Xerox 9700 was installed. In order to develop and test CICS under MVS, an IBM 4341 was acquired. Late in the fiscal year, the IBM 4341 was replaced with an IBM 3081D. Center renovation produced separate rooms for Teleprocessing, CPU/disks, printers, and tape drives. These changes reduced downtime in the miscellaneous category.

Fiscal 83/84: The STC 8360 disk drives were upgraded to STC 8650s. The conversion to MVS was completed and the Amdahl 470V/8 was eliminated. There was a significant reduction in hardware outages resulting from better error recovery with MVS and the improved reliability of the IBM 3081 over the Amdahl 470V/8.

Fiscal 84/85: At that time, MVS was being run under VM. Efforts were made which significantly reduced software problems.

Fiscal 85/86: Downtime due to moving to 1155 E. 60th Street is not included in the table since that time was scheduled. The IBM 3081D was replaced by an Amdahl 5860 and VM was eliminated. The reduction in miscellaneous outages was probably due to the improved environment.

DEC 2060

Fiscal 81/82: We were running one DEC using TU45 tape drives and RP06 disk drives.

Fiscal 82/83: TU72 tape drives were installed and the conversion to more reliable RP07 disk drives was started. A second DEC 2060 was installed and opened to customers in April.

Fiscal 83/84: The significant reduction in hardware outages was mainly due to the conversion to RP07 disk drives.

Fiscal 84/85: The increase in the number of downtime hours was related to the reduction of maintenance hours covered. Before this fiscal year, the maintenance contract covered 24 hours per day, 7 days per week. Maintenance coverage was reduced to weekdays at eight hours per day.

Fiscal 85/86: The reduction in hardware and miscellaneous outages was probably due to the improved environment at 1155 E. 60th Street.

Pyramid

Fiscal 84/85: The Pyramid was installed and made available to customers in October. The system has weekday maintenance coverage for eight hours per day. This increases the duration of out-of-service time for off-hour and weekend problems.

Fiscal 85/86: Ethernet was installed along with an additional 450 MB disk drive. Significant reductions were made in the incidents of all outage categories.

Comparison of Unscheduled Downtime for Computation Center Computer Systems

FISCAL YEAR	SVS - MVS		DEC 2060		PYRAMID		YEARLY TOTAL	
	#	Hours	#	Hours	#	Hours	#	Hours
85/86								
Software	15	6.28	48	11.85	39	30.50	102	48.63
Hardware	12	23.58	67	200.95	26	73.30	105	297.83
Miscellaneous	6	10.13	18	40.26	3	56.80	27	107.19
Total	33	39.99	133	253.06	68	160.60	234	453.65
84/85								
Software	15	9.72	49	16.10	66	32.20	130	58.02
Hardware	11	20.73	77	270.12	45	171.40	133	462.25
Miscellaneous	17	25.49	50	34.66	7	30.60	74	90.75
Total	43	55.94	176	320.88	118	234.20	337	611.02
83/84								
Software	34	16.83	41	17.12	N/A		75	33.95
Hardware	21	30.53	64	48.98			85	79.51
Miscellaneous	20	11.08	41	26.97			61	38.05
Total	75	58.44	146	93.07			221	151.51
82/83								
Software	31	10.39	42	14.84	N/A		73	25.23
Hardware	72	88.47	177	152.83			249	241.30
Miscellaneous	23	11.44	51	20.39			74	31.83
Total	126	110.30	270	188.06			396	298.36
81/82								
Software	67	23.10	22	7.10	N/A		89	30.20
Hardware	83	83.65	200	180.15			283	263.80
Miscellaneous	44	19.08	37	9.05			81	28.13
Total	194	125.83	259	196.30			453	322.13

Computation Center Seminars for Winter Quarter

The Computation Center is offering several short seminars during the Winter Quarter which are open to the general University community. These seminars are free of charge and are designed for the new computer user. Except where prerequisites are noted, no prior knowledge of computers is necessary. All seminars will meet in Harper 406 from 3:30 to 5:00 p.m. on the day indicated below.

Note that pre-registration is required. At least six registrations are needed to conduct a seminar. To register, phone 962-7153 by the date shown with each seminar.

CC205 - Introduction to the Amdahl 5860

Dates/Times:　Mon., 1/12/87 (Part 1)
　　　　　　　Wed., 1/14/87 (Part 2)
　　　　　　　Fri., 1/16/87 (Part 3)
Prerequisites:　None
Register by:　January 7, 1987
Instructor:　Ernie Froemel

This three-part seminar will introduce you to the large mainframe, the Amdahl 5860.

Part 1 (1.5 hours) will describe the major components of the system and the basic features of SuperWylbur, in particular how to logon, create and edit text, save and scratch files, and run batch jobs.

Part 2 (1.5 hours) will continue the description of SuperWylbur and describe the dataset security system. How to use TSO to logon and create or change dataset access rules will also be explained, along with how to monitor account status using AMDB.

Part 3 (1.5 hours) is devoted to the full-screen products on the Amdahl. Both Full Screen Super-Wylbur and ISPF on TSO will be demonstrated.

CC210 - Introduction to the DEC-20

Dates/Times:　Tue., 1/13/87 (Part 1)
　　　　　　　Thu., 1/15/87 (Part 2)
Prerequisites:　None
Register by:　January 8, 1987
Instructor:　TBA

Part 1 (1.5 hours) introduces the DEC-20 at the University of Chicago. Logging on, the command structure, and the file system will be explained.

Part 2 will survey the software available on the DEC-20 and demonstrate basic commands for creating and manipulating files.

CC430 - Text Formatting with Script and Treatise

Dates/Times:　Tue., 1/20/87 (Part 1)
　　　　　　　Thu., 1/22/87 (Part 2)
Prerequisites:　CC 205
Register by:　January 15, 1987
Instructor:　Melinda Shore

Part 1 (1.5 hours) will discuss using Script to prepare text (books, papers, letters, etc.) on the Amdahl 5860.

Part 2 (1.5 hours) will explain how to use Treatise, a program designed to format dissertations according to University standards.

CC470 - Typesetting Emulation with Xset

Dates/Times:　Wed., 1/21/87
Prerequisites:　CC 205
Register by:　January 16, 1987
Instructor:　Joyce Weil

Creating resumes or other text, such as this *Newsletter*, is simplified by using Xset. This seminar will focus on the Xset environment and commands.

MVS

MVS/XA — What the User Needs to Know

— *Ron Thielen*

MVS/XA (eXtended Architecture) is IBM's latest and most advanced operating system. The Computation Center is now in the process of converting the operating system on the Amdahl 5860 to MVS/XA. An explanation of the reasons behind the conversion and a description of the major features of MVS/XA may be found in the Fall 1986 *Newsletter*.

We expect MVS/XA to become our production operating system on Saturday, December 20, 1986. Even though a large portion of the system is changing, users should not have to make any changes to existing programs, unless they wish to use the new features and facilities. We are making every effort to insure that the transition is effortless and painless to the MVS user.

One inconvenience which cannot be avoided is a cold start of JES2. This means that remote output which has not been printed by midnight on December 19th will be rerouted and printed on the Xerox 9700s. The output will then be placed in the appropriate delivery bin. Any held output will be released and printed at that time.

The MVS/XA system includes the latest releases of several products as well as some totally new facilities. Many of these latest releases are available for

testing on the current system. These include PL/I 5.1, VS/COBOL 2.4, and SYNCSORT 2.5. Details on the test procedures can be found in the Notice file.

New facilities, such as TSO/E, add functionality without removing currently available function. This means that you do not have to make any changes to continue working as you do today. You will only become aware of these enhancements if you go looking for them. Documentation for these new functions will be made available at some point in the near future.

The Computation Center has been testing MVS/XA since the beginning of this year. While we have had little trouble and expect to encounter even less, we cannot duplicate the diversity of our users' applications in a test environment.

Therefore, we will make MVS/XA available to you for testing on the two weekends preceding the conversion date. You will not be billed during these user test periods, because these are "test" periods and there may be some instability. Changes you make during this time, e.g. cataloging a new dataset, will be reflected back to the MVS/370 system, but you should consider the possible volatility of a new system before running any critical work.

Although specific times have not yet been determined, the MVS/XA calendar looks as follows:

Date	Time	Activity
12/6/86	tba	user testing
12/7/86	tba	user testing
12/13/86	tba	user testing
12/14/86	tba	user testing
12/20/86	00:00 - 08:00	installation

As we get closer to the testing and installation times, detailed information will be placed in system messages and the Notice File.

After MVS/XA is installed, we will be able to make improvements in several areas. You can expect to see a new version of SuperWylbur, a new full screen mail interface in TSO, connection of the Amdahl to the campus wide Ethernet, and many other enhancements.

962 exchanges become
702 after 1/1/87

Electronic Mail To and From MVS

— Eric Nelson

Unlike the mail programs on the Pyramid and the DEC-20, the SuperWylbur mail program is not yet integrated with its network mail capabilities. To send mail from one SuperWylbur user to another you simply collect your text and use the command

mail to logonid

When the receipient next logs on, the message,

YOU HAVE MAIL

will appear. She or he can then read the mail using the getmail command.

If you get network mail, however, you will not be notified of its presence when you log onto Super-Wylbur. (You will be notified under TSO, though.) In order to check your mailbox, and access the messages you need to use one of two public macros. One, chekmail, simply checks to see if there is new mail. It is designed to be directly inserted in your profile. The other, mail, gives you access to the mail messages.

These macros work by collecting your commands and submitting a batch program to the UCLA Mail program. This program is interactive if you log onto TSO, but must be run in batch mode from Super-Wylbur. Nonetheless, the mail macro is written to look and act like an interactive session with the UCLA Mailer.

Chekmail can be executed simply with the command pub chekmail. This command can be inserted in your profile to automatically check for mail each time you log on.

Mail is executed with the command pub mail, and is more complex. However, it is internally documented. Both the macro and the UCLA Mailer program have help available via the help or ? commands.

When you receive network mail, the mail macro must be used to read the message. The read command will fetch the first unread message and list it at your terminal. Read 5 can be used to read the fifth message, whether or not it is unread. If you wish to save the mail into a file, read 5 into "filename", will store the message into whatever file is specified.

Sending mail into the networks requires knowledge of the address of the recipient, and of your address on MVS. (See the article, "Electronic Mail: General Information", in the General News section of this Newsletter.) Below are address forms to send mail from MVS and to receive it there. These addresses apply whether you use pub mail under SuperWylbur, or MAIL under TSO.

Local mail addresses to other machines from MVS are as follows:

To:	Address from MVS
MVS	logonid
Sphinx	personid@sphinx.UChicago
Chip	username@chip.UChicago
Ethernet	user@machine.UChicago

Local mail addresses to MVS from other machines are as follows:

From:	Address to MVS
MVS	logonid
Sphinx	logonid@UCHIMVS1.Bitnet
Chip	logonid@UCHIMVS1.Bitnet
Ethernet	logonid@UCHIMVS1.Bitnet

Network mail addresses to other networks from MVS are as follows:

To:	Address from MVS
Bitnet	user@node
Internet	user@node.domain
Mailnet	user@node.Mailnet
UUCP	user@node.UUCP

Network mail addresses to MVS from other net-

works are as follows:

From:	Address to MVS
Bitnet	logonid@UCHIMVS1
Internet	
	logonid%UCHIMVS1.Bitnet@wiscvm.wisc.edu
Mailnet	logonid%UCHIMVS1.Bitnet@MIT-Multics
UUCP	...!psuvax1!UCHIMVS1.Bitnet!logonid

To send network mail from SuperWylbur, the *mail* macro assumes that the message or file has already been written. It can be present in a temporary or on disk. Within *mail*, the *send* command can be used to refer to the temporary or file to be mailed. For example, to mail a temp named LETTER1, the command, *send t letter1*, will begin the mailing procedure. The address will then be prompted for. So, if you wish to send mail to STAFF.ADVISOR on Chip, you would enter the address in response to the *To:* prompt, e.g.

To: *staff.advisor@chip.UChicago*

Similarly, if you wanted to send mail to USERAOK on the Bitnet node NSNCC, the address would be specified as

To: *useraok@nsncc*

Because UCHIMVS1 is on Bitnet, it is not necessary to include the network affiliation. On the other hand, if the machine is not known specifically to Bitnet, you would need to specify the domain(s) by which the machine is known. For example,

To: *useraok@gregorio.stanford.edu*

Here USERAOK is on machine GREGORIO which is known to the STANFORD domain, which in turn is known to the EDU domain.

TOPS-20

SPSSX Release 2.1 Available on Chip

— *Eric Nelson*

SPSSX Release 2.1 is now available on the DEC-20. This is the version which has been in production on MVS since February 1986, and has most of the features described in the *SPSSX User's Guide, 2nd Edition*. (*Tables* is an extra cost option and is not included with release 2.1 as installed at the University of Chicago.) The new release adds features such as multidimensional scaling, cluster analyses for large data sets, hierarchical log-linear analysis, probit and logit analyses, proximity matrices, and additional string handling and dataset management procedures. Systems files created under Release 1.0 are compatible with this version.

For a short time, Release 2.1 will be available in test mode, so that it will be necessary to run it using the

@test spssx

command. If problems are encountered, please save your output and mail it to STAFF.ADVISOR, or call the Advisor at 962-7624. In the absence of major problems, the Release 2.1 will become the production version after about two weeks of testing. Watch the Notice file for further information.

Electronic Mail To and From Chip

— *Eric Nelson*

On Chip, like the Pyramid, and unlike SuperWylbur, local mail and network mail are integrated. When network mail arrives, it is stored in your MAIL.TXT file, and when you enter MM, the network mail is listed as is any other mail, and it can be saved into a separate file using the *move* command.

As described in the article "Electronic Mail: General Information", in the General News section of this *Newsletter*, the most difficult problem is knowing the address and route to the recipient and providing an accurate return address for replies. This can be especially difficult across networks, especially as mail systems are continuously changing.

The tables below show address forms for sending mail, and return addresses for receiving mail on Chip. Some routes across networks are not known at this time.

Local mail addresses to other machines from Chip are as follows:

To:	Address from Chip
Chip	username
MVS	logonid@UCHIMVS1.BITNET
Sphinx	personid@sphinx
Ethernet	user@machine

Local mail addresses to Chip from other machines are as follows:

From:	Address to Chip
Chip	username
MVS	username@chip.UChicago
Sphinx	username@chip
Ethernet	username@chip

Network mail addresses to other networks from Chip are as follows:

To:	Address from Chip
Mailnet	user@node
Bitnet	user@node.bitnet

962 exchanges become
702 after 1/1/87

Internet   user@node.domain
UUCP   user@node.UUCP

Network mail addresses to Chip from other net-
works are as follows:

From: **Address to Chip**
Mailnet   username@UChicago
Bitnet   username@chip.UChicago
Internet
      username%UChicago.Bitnet@wiscvm.wisc.-
      edu
UUCP   (not implemented)
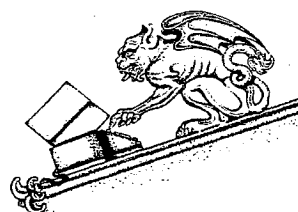
PYRAMID/UNIX

Pyramid Upgrade on Hold

The CPU, memory, and I/O processor upgrades announced in the Fall 1986 *Newsletter* for Sphinx, the Computation Center's Pyramid/Unix system, have been postponed because of internal difficulties with contract details at Pyramid Inc. This is also true for the upgrades to Anubis, the Computer Science Department's Pyramid system.

We are working with Pyramid Inc. to attain a satisfactory resolution to this problem.

Network Mail To And From the Pyramid

— Eric Nelson

On the Pyramid, like Chip, and unlike SuperWylbur, local mail and network mail are integrated. When network mail arrives, it is stored in */usr/spool/mail/**, and when you enter *mail*, the network mail is listed as is any other mail, and it can be saved into a separate file using the *save* command.

As described in the article "Electronic Mail: General

Information", in the General News section of this *Newsletter*, the most difficult problem is knowing the address and route to the recipient and providing an accurate return address for replies. This can be especially difficult across networks, especially as mail systems are continuously in flux.

If you are going to send mail over UUCP from the Pyramid, you need to know the entire route from Sphinx to the destination machine. To assist in this, a program called *uupath* provides a path from Sphinx when given the name of the destination. For example, if you know someone who has userid *frodo*, on the machine known as *mordor*, the command

uupath mordor

will return with the path

gargoyle!ihnp4!seismo!mordor

So to mail something to *frodo*, your mail command would be

mail gargoyle\!ihnp4\!seismo\!mordor\!frodo

(Note that the \ character is needed to prevent the ! character from being interpreted by the shell.)

Although there are many different routes that you can give as your return address, there are a number of machines which are well known sites, so that you may not have to specify a full address. It is often sufficient to specify the path from the nearest hub machine to your machine. Therefore, specifying your return address on the Pyramid as *...!ihnp4!gargoyle!sphinx!personid* is usually enough. Almost all machines know how to get to ihnp4.

The tables below show address forms for sending mail, and return addresses for receiving mail on Sphinx. Some routes across networks are not known at this time.

Local mail address to other machines from Sphinx are as follows:

To:	Address from Sphinx
Sphinx	personid

962 exchanges become
702 after 1/1/87

Chip   username@chip
MVS   logonid@UCHIMVS1.Bitnet
Ethernet user@machine

Local mail address to Sphinx from other machines are as follows:

From:	Address to Sphinx
Sphinx	personid
Chip	personid@sphinx
MVS	personid@sphinx.UChicago
Ethernet	personid@sphinx

Network mail addresses to other networks from Sphinx are as follows:

To:	Address from Sphinx
UUCP	gargoyle!ihnp4...!host!user
Bitnet	user@node.Bitnet
Internet	user@node.domain
Mailnet	user@node.mailnet

Network mail addresses to Sphinx from other networks are as follows:

From:	Address to Sphinx
UUCP	...!ihnp4!gargoyle!sphinx!personid
Bitnet	personid@sphinx.UChicago
Internet	personid%sphinx%UChicago.Bitnet@wiscv-m.wisc.edu
Mailnet	personid%sphinx@UChicago

MICROCOMPUTING

College Opens Microcomputer Lab at Usite

— *Steven Loevy*

The new College Microcomputer Lab opened in Usite, Wieboldt 310, this November. The Lab has ten Macintosh 512Es and a LaserWriter. Attendants have been hired by the College and assigned to the Microcomputer Lab to assist both new and experienced users.

The College Microcomputer Lab serves two complementary purposes: to provide general access to microcomputing to students in the College, and to provide first year students with word-processing facilities and instruction in association with Humanities Common Core courses. Writing Interns assigned to certain Humanities sections have been trained to teach writing in conjunction with word-processing.

The College Microcomputer Lab is open from 2 p.m. to 11 p.m. Sunday thru Thursday, 11 a.m. to 8 p.m. Friday, and noon to 6 p.m. Saturday. Users pay a $25 quarterly charge, or $2.00 per hour. Residents of the Shoreland may use both the Shoreland Microcomputer Lab and the College Microcomputer Lab for the single quarterly charge.

Microcomputer Distribution Center Update

— *David Davoust*

New Services

On-site repair for a large variety of products and peripherals is now available through the Microcomputer Distribution Center (MDC). Under an agreement with REX Service Company, the University community can now obtain excellent service at very competitive rates for a rich array of products. REX has an established record of high quality service on campus that boasts a four hour response time and guarantees two service calls a year. Maintenance contracts with REX are available through the MDC. A partial list of vendors serviced includes AT&T, Hewlett-Packard, IBM and Zenith. The Computation Center continues to provide carry-in service for Apple products under Applecare and on a time-and-materials basis.

We are now stocking more products! The acquisition of additional storage space allows us to maintain a modest inventory of the most prominent products from all of our major vendors including Apple, AST, AT&T, Hewlett-Packard, IBM, U.S. Robotics and Zenith, as well as software from Lotus, Microsoft, Minitab, WordMarc and WordPerfect.

New Products

New products include Apple SCSI hard drives, U.S. Robotics modems, Microsoft Works, AST memory cards for MS-DOS machines and AST hard drives for the Macintosh.

Due to manufacturing constraints, we do not expect the Apple IIgs to be available until the middle of the Winter quarter.

Fairs

The Electronics Fair in October was a success. Most of our vendors were there and everyone had a chance to get their hardest questions answered

and to use the equipment. A Macintosh Plus and a Zenith 171 Portable were raffled off and the lucky winners were Samual Schwartz and Mary LaBrec. Congratulations! The Computation Center Open House also drew a large crowd and Tim Mills-Groninger was the recipient of the free copies of Microsoft Word and Microsoft Flight Simulator. Watch the *Maroon* for more product fairs and special events.

Special Prices

Christmas is a time for special pricing, and until January 9th, the MDC will be offering two Apple Holiday Bundles, which can save you $250 on the purchase of a Macintosh and an ImageWriter II. Each bundle also includes a free copy of MacLightning, an excellent spelling-checker program.

In addition, there is special pricing until the end of December on the Zenith 171 Portable, and on the IBM PC bundle which, according to *PC Magazine*, makes the IBM PC the best choice among low-end compatibles. Many other prices have dropped as well. Check our price list.

General Information

Price lists are available on the third floor of the Computation Center (1155 E. 60th Street), at Usite (Wieboldt 310), and at the Microcomputer Distribution Center in the basement of the Graduate Student Residence Hall (1307 E. 60th Street, rear entrance). You can also call the MDC at 962-6086. The MDC is open Monday through Friday from 10 a.m. to 4 p.m.

If you have special service or product needs, feel free to call the MDC at 962-6086, the MDC Administrative Coordinator, Joyce Morris, at 962-6082, or the MDC Manager, David Davoust, at 962-6198.

Demonstration and Development Lab: Recent Acquisitions

— Marc Jacobson

The following new products have been added to the Microcomputer Demonstration and Development Lab, 1155 E. 60th Street. To make an appointment to see any of the hardware or software in the Lab, call 5-3150 or 962-7178.

New Hardware includes:

AT&T 6300 Personal Computer — an IBM-XT compatible computer with 640K RAM and an Intel 8086 processor, a 20MB hard disk, and a high resolution color monitor.

COMPAQ PORTABLE II — PC/AT compatible computer utilizing 80286 processor at 8MHZ; 640K RAM with high-resolution monitor and a Microsoft Mouse.

COMPAQ DESKPRO — PC/XT compatible with 640K RAM and an Intel 8086 processor at 4.77/7.14 MHZ; 20MB hard disk, and cassette tape drive.

MICROSOFT MOUSE — MOUSE connects to 9-Pin serial port for use with Windowing software, Menu-bar driven software, etc.

TANDY 3000 HD — A new Tandy 3000 with 640K RAM, a 40MB hard disk, and a 1.2MB quad density floppy drive. Runs off an Intel 80286 processor at 8MHZ. It also has ten expansion slots and a high resolution color monitor.

New Software for the MacIntosh:

EXPERLISP ver. 1.5 by ExperIntelligence. An AI symbolic language compiler based on LISP.

EXPERPROLOG II by ExperIntelligence. An AI logic programming language based on the original PROLOGII.

FILE COMPILER ver. 1.0 by ExperIntelligence. A file compiler for ExperLisp which enables saving and loading of compiled programs.

MACSPIN by D2 Software. Graphical data analysis software designed for high performance interaction with multivariate data. It is a tool for looking at three and higher dimensional data.

MICROSOFT WORKS Demo Disk. Integrated system for spreadsheets, data base management and word processing.

New Software for IBM and Compatibles:

EASY by Micropro Corporation, ver. 1.5. An easy to use word processor.

GRAPHSTATION, ver. 1.0. Graphics software for creating scientific charts, text charts and business charts.

LOTUS 1-2-3, ver. 2.01 by Lotus Development Corp.

LOTUS SYMPHONY ver. 1.2 by Lotus Development Corp. An integrated package for spreadsheets, graphics, word processing, data management and communications.

RBASE SYSTEM V, demo version 1.00. A new data base management system by Microrim.

WORDSTAR 2000 PLUS version 2.00 by Micropro Corp.

Since the *Newsletter* is only published quarterly, we recommend using the MICLAB program on the DEC-20 to obtain up-to-date information about hardware and software in the Lab. Using the "new" option, you may limit the display to hardware and software acquired within the last month or week. A complete listing of all hardware and software can also be obtained through MICLAB, and copies are available from the 3rd floor receptionist at the Computation Center, 1155 E. 60th Street.

TOPS — A Local Area Network Connecting MACs and IBM PCs

— Dorothy Raden

TOPS, a local area network developed by Centram Systems using the Appletalk transport layer and cabling, has been installed on several Macintoshs at the Computation Center offices. IBM XTs are also connected to the TOPS/Appletalk network by the TOPS printer circuit board for IBM XT/AT. The total network spans three Appletalk network segments connected by Hayes Interbridges, allowing nodes (stations) on any of the three networks to communicate with devices on another segment. Data can be transferred on the network at about 230 Kbits/second.

TOPS allows a Mac or IBM station to make its folders/subdirectories, hard disks or programs available to others on the network by "publishing" a volume. A Macintosh can use an XT hard disk for storage if that station allows it. A program in a "published" volume may be executed by a user at another station in the network, if that station can understand the application. Additionally, files may be transferred from one station to another quite easily. For example, an Excel spreadsheet on a Macintosh may be transferred to an IBM-XT and opened by Lotus. Password protection is available at the folder and volume level.

Future releases of TOPS will support a Unix server with the appropriate hardware connection or gateway. Another product planned by Centram is a Postal system for passing and receiving messages automatically.

DEPARTMENTS

People

People who have joined the Center:

Andy Beecham, Thomas Connelly, Allen Douglas, Millicent Jones, Ravindra Nemana, Paul Schiffer, and **Daniel Tangherlini** are Stock Clerks in the Microcomputer Distribution Center. **Ronald Burnett** has rejoined the Center as a Senior Computer Operator. **Tina Flowers** has joined the Center as receptionist. **Lawrence Lerner** is a Cluster Attendant. **Myra Squires** has rejoined the Center as Production Expeditor in Production Services.

Transfers/Promotions within the Center:

Barbara Ellis has been promoted to Account Representative in Production Services. **Peter Hayward** has been promoted to Assistant Director for Finance and Administration. **Richard Marshall** has been promoted to Supervisor of Production Services. **Michael Scurlock** has been promoted to Senior Computer Operator. In addition to his duties as Junior Programmer/Analyst I in Application Systems, **Robert Thompson** is now Junior Analyst in Information Technologies and New Services.

People who have left the Center:

Matt DeFlorio, File Clerk, has graduated and left the Center for the real world. **Theodore Kim,** Stock Clerk in the Microcomputer Distribution Center, has left to devote more time to his studies.

Thomas Cox, Penelope Fovall, Thomas Hoffer, William Merrick, Claire Pearson, David River and **Randal Rzara,** Cluster Attendants, have left. **Steven Upp,** Assistant in the Demonstration and Development Laboratory, has returned to school.

Congratulations:

The following staff members were honored at a reception given by President Gray for University employees with over twenty-five years of service: **Allan Addleman, June Robinson, John Stark,** and **Joyce Weil.**

Documentation

New Documentation or Major Revisions

11/05/86 **R114** MAGNETIC TAPE USAGE
The manual "Magnetic Tape Usage" (TAPEMAN, R114 in DOCLIST) has been extensively modified to reflect the elimination of DECsystem-20 Dale and to incorporate and update information from Memo 2008, "DEC-20 Tape Procedures," which was removed from DOCLIST.

10/17/86 **R70** DEC-20 AT UofC
"The Introduction to the DECsystem-20 at the University of Chicago," (DECMAN, R70 in DOCLIST) has been extensively updated, to reflect the elimination of DEC-20 Dale and to represent current policies and procedures on the DEC.

10/13/86 **4255** TERMINAL SERVICES
Memo 4255, "Terminal Services," has been extensively updated, both to reflect the elimination of DECsystem-20 Dale, and to make current the information, policies and procedures presented.

09/25/86 **R180B** 1022 Host Lang., Version 117B

The Host Language Manual contains information needed to write and run FORTRAN, COBOL, and MACRO application programs using the System 1022 subroutine library. This manual is for version 117B of System 1022.

09/25/86 **R180A** 1022 User's Manual, Ver. 117B

The User's Reference Manual contains complete information about the interactive use of System 1022. This is the primary documentation for version 117B of System 1022.

09/23/86 **R81H** SuperWylbur Workbook

The SuperWylbur Workbook was written to teach the beginner how to use SuperWylbur. It is meant to be used at the terminal while working on the system, not as a reference manual. There are six sessions in the Workbook which deal with the following areas: signing on and typing text, making revisions to text, working with multiple files, formatting text for document preparation, entering a job and retrieving output, and writing a profile macro.

Recently Updated Documentation

10/03/86 **2050** MUSE

New in the MVS Notice File

10/08/86 **COB3** Cobol updates

New in the DEC Notice File

10/01/86 **SVC5** Advice Desk Information

10/01/86 **SVC2** Computer Communications Information

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860 and the DEC-20, Chip.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization Aug. 1986 - Oct. 1986

Service Provided	Amdahl 5860/MVS August 1986	Amdahl 5860/MVS September 1986	Amdahl 5860/MVS October 1986
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	2:45	4:41	1:50
non-setup jobs	1:23	3:15	1:04
tape setup jobs	15:11	22:02	11:29
Total CPU-hours used	168 hrs 48 min	190 hrs 36 min	170 hrs 0 min
SuperWylbur sessions	17,803	15,649	20,120
CPU hours	8 hrs 13 min	7 hrs 52 min	7 hrs 14 min
connect hours	13,333 hrs	11,391 hrs	13,642 hrs
average session	45 min	44 min	41 min
average CPU/session	1.66 sec	1.81 sec	1.30 sec
TSO sessions	3,285	3,175	4,059
CPU hours	3 hrs 51 min	3 hrs 19 min	4 hrs 46 min
connect hours	1,477 hrs	1,528 hrs	1,623 hrs
average session	27 min	29 min	24 min
average CPU/session	4.21 sec	3.75 sec	4.22 sec
Jobs submitted	52,366	45,982	52,111
Steps executed	107,066	95,373	104,125

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown).

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs Aug. 1986 - Oct. 1986

Program	Description	Percent	Count
UCFLBL20	FILEBOL	9.19	31242
SASLPA	SAS	7.04	23908
WYLLIST	SUPERWYLBUR List Offline	6.19	21039
SORT	SyncSort	5.01	17040
IEBGENER	IBM file handling utility	3.96	13472
IEFBR14	IBM utility - null step	3.77	12824
IEWL	Linkage editor	3.25	11038
IDCAMS	VSAM utility for catalog operations	2.88	9784
SUCCESS	Operating Services utility	2.72	9232
FAIL	Operating Services utility	2.68	9094
MARKYBOL	Systems utility	2.62	8908
IBMDEC	IBM/DEC link utility	2.61	8863
SPSSX	SPSS Version X	2.51	8541
BATCH204	Model 204 run in batch	2.20	7471
PGM = *.DD	User defined routines	1.49	5069
IKFCBLOO	VS Cobol version 2.4	1.33	4514
MAILXBM	Bitnet mail through SuperWylbur	1.24	4215
MVGDG	Multi-volume tape GDG cycler	1.23	4187
UOCVTOC	List volume table of contents	1.33	3641
IELOAA	PL/I compiler	1.06	3605

CHIP - DECsystem-2060 Utilization Aug. 1986 - Oct. 1986

Account Period	August 1986		September 1986		October 1986	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	94.7	4995	92.2	4871	117.1	6647
EVENING	34.7	606	30.0	647	44.3	1100
OVERNIGHT	76.5	891	67.2	901	110.5	1375
TOTAL	205.9	6492	189.4	6419	271.9	9122

Top Twenty Chip Programs Aug. 1986 - Sep. 1986

Program	Description	Percent	Count
OPR	Operator functions	8.46	23017
MM	Electronic Mail Manager	7.83	21302
SYSDPY	Operator interface with job queues	4.89	13298
PTYCON	Pseudo-terminal controller	4.87	13264
MMAILR	Network mail daemon	4.76	12948
WATCH	Generates these statistics	4.76	12945
NETSRV	Supports ethernet network functions	4.75	12942
SYSJOB	System job controller	4.75	12938
RWHOD	Lists users on ethernet hosts	4.75	12937
IBMSPL	MVS link daemon	4.74	12893
USAGE	Utility to collect program use data	4.73	12877
WINDOW	Full screen PTYCON	4.73	12866
BITNET	Off-campus electronic mail network	4.67	12722
EXEC	TOPS-20 command processor	4.53	12322
1022	Database system	3.51	9561
MUSE	Full screen editor	3.42	9308
DEMAND	Data management system	2.20	5978
EMACS	Full screen editor	2.18	5927
BATCON	Batch Controller	2.02	5512
MINITA	Interactive statistical program	1.58	4306

General Information

Effective January 1, 1987, all **962** exchanges will become **702**.

Computation Center Administration

Acting Director of the Computation Center	John E. Iannantuoni	962-7616

Associate Director
Operations and Technical Services	John E. Iannantuoni	962-7616

Assistant Directors
Instruction and Research Information Services	Harold C. Bloom	962-7155
Information Technologies and New Services	George R. Bateman	962-7174
Finance and Administration	Peter B. Hayward	962-8671
Administrative Information Services	David E. Trevvett	962-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	962-7151
Microcomputer Distribution Center	1307 E. 60th St., Rear Entrance	962-6086
Multi-media Classroom	Harper 406	962-7153
Usite Terminal Cluster	Wieboldt 310	962-7894

Computer Communications Information

Phones	**300 baud**	**1200 baud**	**2400 baud**	**4800 baud**	**9600 baud**
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	**300 baud**	**1200 baud**	**2400 baud**	**4800 baud**	**9600 baud**	**telenet**
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	mvs24/vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20	chip	chip	chip	chip	chip	chiptn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	General address form	Example
Amdahl 5860 (MVS)	logonid@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username@chip.uchicago	staff.hal@chip.uchicago
Pyramid 90x (Sphinx)	person-id@sphinx.uchicago	halb@sphinx.uchicago

Telenet dial-in information

	Nearest phone number	Network address
	800-336-0437 most states	31236A (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)

Quick Reference Phone Directory

Effective January 1, 1987, all **962** exchanges will become **702**.

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Word processors	

Computer supplies & tapes 962-7159

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Data entry services 962-7604

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THE UNIVERSITY OF CHICAGO
COMPUTATION CENTER
NEWSLETTER

Table of Contents

GENERAL NEWS

Version 2.0 of T_EX Now Available

— Melinda Shore

Version 2.0 of T_EX is now available on all three Computation Center mainframes. T_EX is a typesetting language developed by Donald Knuth of Stanford University. While it was designed primarily for working with scientific and technical text, it has features that are attractive to computer users in all disciplines, including an extensive macro facility, a very general and flexible approach to font use, a consistent syntax, and a high-degree of device independence. See the articles later in this *Newsletter* for details on running T_EX in each environment.

We also have a driver, called DVIXER (pronounced "duh-vi-zer"), for printing T_EX output on the Xerox printers. A temporary limitation is that we currently are supporting only the older AM fonts, which means that you may need to run T_EX a little differently in order to generate output that can be printed by DVIXER. We are expecting the CM fonts to arrive soon. Another limitation is that, until further notice, users printing T_EX files on the Xerox printers will have to wait 24 hours for them to print unless they release them explicitly using the *print* command on MVS. Details on how to print on the Xerox printers are included in the articles in this *Newsletter* describing each T_EX implementation. In addition, a driver for the Talaris 1200 printer connected to sphinx will be available soon.

People who are using T_EX on microcomputers can upload their files to the Amdahl and print them on the Xerox printers. To transfer the *dvi* files using Kermit, you need give the following commands to TSO Kermit:

```
TSO-Kermit>  set marker('^c')
TSO-Kermit>  set ascii(off)
TSO-Kermit>  set recfm(u)
TSO-Kermit>  set block(1024)
```

Once the file is transferred, the following JCL will run the driver and spool the output to the printer:

```
//DVIXER   JOB   logonid,'programmer name',
//         MSGCLASS = X,REGION = 2000K
// EXEC  DVIXER,DVIFILE = 'logonid.filename'
```

where DVIFILE indicates the *dvi* file that you want printed.

Options that can be included on the EXEC card are:

FORM =   The default is NHOL.

COPIES =   The default is 1.

DVIOPT = This string is passed to DVIXER. Options include "startcounts = ", which specifies the starting page for translations (default is 1); "maxpages = ", which gives the maximum number of *dvi* file pages to be translated (default is all); "datemark", which causes a time/date stamp to be written at the top of each page (default is "nodatemark"). See *The T_EXbook* for a discussion of page numbering.

We will continue to add utilities and drivers in support of T_EX. Announcements will be made through the Notice file as new features become available. *The T_EXbook* and other text processing reference sources are available at the University bookstore.

Tape Assignment Charge to Increase May 1

— John Tomas

Effective May 1, 1987, the one-time charge for tape assignment at the Computation Center will increase to $1.50, $1.65 and $1.95 for internal, external academic and external non-academic, respectively. This charge appears on accounting statements as RT/RC 30/420. It will be assessed when you rent a Center tape through the Tape Librarian; when you request an unassigned tape through a SETUP card in a batch job; when the operator assigns an additional tape to complete writing of a file for your batch job; or when you rent a slot for permanent storage of your own tape. The charge will NOT be assessed for tapes put into temporary storage through the I/O window at Operations Site.

This increase will more accurately reflect the cost of administering permanent tape storage.

Labels on the Xerox 9700 Printer

— John Tomas

Mailing labels may now be printed on the Xerox 9700 laser printer. In the past both the 1" and 1.5" labels have been printed on the Center's impact printers. Now, the new 1" laser labels offer significantly higher resolution at comparable cost.

Xerox labels can be produced via a batch job using the LABELS cataloged procedure, or by using the SuperWylbur *list offline* command. Memo 4142, "Printing Mailing Labels," is available through Doclist and describes how to produce the Xerox laser-printed labels using either method. In addition, the

memo summarizes the methods for producing the older, impact printed labels.

If you currently use the LABELS procedure for 1" labels, you can direct your output to the 9700 by making the following changes in the JCL and /*OUTPUT cards. Simply specify:

FORMS = AL33,

PFORMAT as either LBLSNS for labels printed top to bottom, one column at a time, or LBLSEW for labels printed left to right, one row at a time,

and JDE = LABELS.

There is an even simpler method. SuperWylbur or any other listing program can be used to generate labels. Enter your data precisely as it will appear on your label except that column one should be reserved for carriage control. A "1" placed in column one of the first line of the label will start a new label. Subsequent lines should begin with a blank in column one. Then list the file off-line using the following command:

list off unn cc forms = al33 pformat = lblsns jde = labels

You may, alternatively, specify "pformat = lblsew".

Project Expiration Dates Now on Monthly Reports

— Kay Sandacz

Project expiration dates now appear on Computation Center monthly reports to users. This information should help project and funds administrators to plan their computer work so that it won't be interrupted by "locked" projects.

A project may be locked either because all the

money allocated to it is spent, or because the money has been allocated for a limited time, which has expired. Beginning with February reports, users are shown the date on which a project will be locked due to an expired time limit.

Project and funds administrators should note that a project could be locked before that date. Depending on the combination of dollar limits and expiration dates, the status of a project with multiple funding sources could change. The project could switch from drawing on a funding source without a time limit to drawing on a funding source that expires earlier than the date printed on the monthly report. The project expiration date printed on statements and invoices is only the latest possible date a project can remain open.

Of course, any project which spends more money than is allocated will be locked immediately. Project and funds administrators should use monthly statements and the on-line AMDB program to monitor both dollar balances and expiration dates to ensure continuous project availability. Any questions about a project's status should be referred to the Business Office, 1155 E. 60th Street (702-7158).

Detail Program To Be Replaced

— *Kay Sandacz*

Sometime during Spring Quarter, the public macro Detail and the program it invokes will be replaced. The Detail program has enabled users to get detailed information about the jobs they have run over an extended period of time on any of the Center computers. The new program will provide users access to data for up to the previous two months and will produce a more readable report.

Users, especially those who submit their own JCL for this job, should keep an eye on the Notice file for particulars of the new program.

Equipment Changes at Usite

— *Donald Tom*

Ten new AT&T PC6300 microcomputers are available for use by University faculty, staff, and students at the Central Users' Site (Usite) in Wieboldt 310. These microcomputers are configured with 640 kbytes of memory, a 20 mbyte fixed disk, and a double-sided diskette drive. Software varies by machine and includes WordPerfect for word processing, Lotus 1-2-3 for spreadsheets, and SAS PC for statistics. Each PC shares an IBM Proprinter through the use of a switch box. All PCs can communicate with the Computation Center mainframe computers through Kermit.

Anyone with valid University identification may use these microcomputers free of charge. By leaving your identification card as security, you may borrow documentation from the cluster assistant at Usite. However, you must provide your own diskettes if you plan to save your work. Unauthorized data and program files will be periodically removed from the hard disk so that there will be enough work space.

The development of microcomputer labs throughout the University is in response to the rapidly changing computing needs of faculty, staff, and students. Unfortunately, it is not always feasible to maintain both old and new technologies at the same time and in the same place. Due to the additions of the AT&T microcomputers and of the Harper Microcomputer Lab, some older equipment has been removed.

The Anderson Jacobson 832 keyboard printer terminal at Usite has already been removed. The old 128K Macintoshes at both Usite and Crerar have also been retired. The ten 512K Macintoshes and the LaserWriter available for use in the Harper Lab should compensate for the loss.

Usite's aging DECwriter II hardcopy terminals will be removed by the end of the Spring Quarter. DEC-20 users may use the Photo program (Memo 2010) to record their DEC-20 terminal sessions and the MVS program (Memo 2052) to print their terminal sessions. MVS users may use SuperWylbur's *set record* and *list off* commands to achieve the same thing.

Finally, the Computation Center hopes to survey Regenstein cluster users regarding their current and future equipment needs with an eye towards replacing aging DECwriters and Teleray terminals.

University Phone Exchange Has Changed

— *Ernie Froemel*

The University's Direct Inward Dial telephone exchange changed from 962 to 702 on January 1, 1987. Before March 1, 1987, any calls placed to the old exchange were automatically transferred to the 702- number. Now, however, calls to 962-numbers are being intercepted and the following message is transmitted:

> The first three digits of the number
> you have dialed have been
> changed from 962 to 702. Please
> re-dial using the 702 prefix or stay
> on the line for an operator.

If the caller stays on the line, a University operator will intervene to help place the call.

The Office of Telecommunications urges you to notify outside contacts of this change if you have not already done so. Free postcards for this purpose may be obtained by phoning 702-7370.

Telenet Network Address Changes

— *Ernie Froemel*

The Telenet network address for 300 baud service has changed to 312436. The 1200 baud network address remains as 31236. These addresses access the University of Chicago Computation Center's Gandalf via the Telenet network. Class codes *mvstn* and *chiptn* then allow connection to either the MVS system or the DEC-20 system, respectively. A new network address, 312437, allows access at 2400 baud to the DEC-20 system only. There is no Telenet access to the unix system.

Telenet is a common-carrier network that allows connecting to the Computation Center computers from outside the Chicago area at rates substantially lower than regular long-distance rates. Users with valid MVS or DEC-20 accounts may access those computers via Telenet from over 200 North American cities without making any special arrangements.

In order to use Telenet, the following three things are needed:

1. The phone number of the nearest Telenet office. This may be obtained by phoning Telenet's Customer Service Desk at 1-800-336-0437. (In Virginia, the number is 1-800-572-0408.) The Customer Service Desk is always open.

2. The appropriate network address: 312436 for 300 baud, 31236 for 1200 baud, or 312437 for 2400 baud.

3. The Gandalf class code: *mvstn* for MVS, or *chiptn* for the DEC-20.

Memo 4325 provides further information about using Telenet; and, memos 4168-4170 provide the

current Telenet connect rates for the different billing classes. All memos are available through Doclist on either the DEC-20 or MVS systems.

Electronic Forms and On-Demand Printing

— *Charles Hodge*

Formerly, forms printing required the use of special, costly pre-printed stock, as well as operator intervention. Now, University departments can create, edit, store and print their own forms electronically, and consequently on demand.

The Benefits of Electronic Forms

Electronic forms are easily created and updated, and allow the implementation of new designs without the time delays required by pre-printed forms. In addition, electronic forms eliminate both the need for costly physical storage and the waste due to the eventual obsolescence of pre-printed forms. Finally, electronic forms printing requires less operator intervention, thereby reducing errors and increasing efficiency.

Electronic Forms Printing

Many of the forms used by the University are now printed electronically by the Computation Center. These include the University's time cards, tax statements, pension statements (ERIP), and ledgers.

If your department uses or needs to use special forms, the Computation Center's electronic printing environment can save you time and money. The Center can provide your department with the tools you need to create and manage your own electronic forms and on-demand printing.

For academic and administrative departments within the University, the Computation Center's electronic forms printing environment offers an efficient, flexible and cost-effective method of forms processing.

For information on electronic forms processing or electronic printing in general, contact the Computation Center's Application Systems Group at 702-6081.

The illustration on the following page displays a few of the forms already produced under the Center's electronic forms printing environment.

Hospital Etherized or A Cable to the West .

— *Don Goldhamer*

The campus Ethernet has reached westward to establish a gateway at the University Hospitals and Clinics complex. Interested computer sites will establish a local Ethernet within the hospital complex, and that local Ethernet will use the new gateway to connect to the campus. For the fortunate users of these computers, many new capabilities will be added, among which are:

1. the rapid and accurate transfer of files from one computer to another, anywhere on campus, with one command;

2. the ability to logon to their account on any other computer on the Ethernet without any additional communication path;

3. simple access to the developing campus-wide electronic mail network, with its connections to several world-wide networks;

4. simple access to high-speed, cost-efficient laser printers and inexpensive data storage devices.

So far only one computer has been connected to the hospital Ethernet, a VAX/750 called ROVER in the Department of Radiation Oncology. But discussions are underway among several interested computer site administrators in the hospital complex, and there are likely to be 2-3 more computer nodes connected within a month and perhaps a dozen more in the future. Expansion of the hospital Ethernet will depend on the installation of a single co-axial cable to reach each computer site. The Hospital also has a 9600 baud DECnet connection to Michael Reese Hospital which permits some slow communication between hospitals.

Two anticipated uses of the campus-wide Ethernet are for access to electronic mail and the sharing of medical data (e.g. X-ray and NMR digital images) for research purposes. The internal hospital network would, of course, serve those and many other purposes. Sites interested in the hospital network should please contact Dr. Charles Pelizzari at 702-1688.

Center Computer Use Since 1980

— *Mike Willey*

Computing facilities at the Computation Center have changed significantly since 1980. In fiscal year 1980/81 (the University's fiscal year is July through June), processing was mainly batch and tape orientated. Impact printers hammered out over 25 million fan-fold pages a year.

Today, much of the batch processing has been replaced with on-line databases. Tape processing is still significant, but is utilized mainly to import and export data, and to backup disk files. Impact printers account for only 2.6 million pages a year with our two Xerox 9700s producing approximately 36 million pages a year of stylized text.

Since 1980, the Center has made several hardware changes, operating system upgrades, and application software enhancements across all our systems.

The following chart depicts CPU capacity, CPU utilization, and disk storage across our systems since fiscal year 1980/81. Note that one "MIPS" is one million instructions per second; the term "CPU" stands for the computer's Central Processing Unit; "CPU Hours Used" are normalized to Amdahl 5860 CPU hours; and one "gigabyte" is one billion bytes.

SYSTEM UTILIZATION

	CPU Capacity (MIPS)	CPU Hours Used	Disk Space (Gigabytes)
1980/81			
(1) DEC 2060	1.8	242	0.6
AMDAHL V/7	6.0	684	10.7
TOTAL	7.8	926	11.3
1981/82			
(1) DEC 2060	1.8	275	0.8
AMDAHL V/7	6.0	780	12.4
TOTAL	7.8	1,055	13.2
1982/83			
(2) DEC 2060	2.2	384	1.4
AMDAHL V/8	7.0	900	16.0
TOTAL	9.2	1,284	17.4
1983/84			
(2) DEC 2060	3.6	704	2.9
IBM 3081D	10.0	1,260	20.6
TOTAL	13.6	1,964	23.5
1984/85			
(2) DEC 2060	3.6	641	2.9
IBM 3081D	10.0	1,836	25.9
PYRAMID 90X	0.9	152	1.0
TOTAL	14.5	2,629	29.8
1985/86			
(2) DEC 2060	3.6	487	2.9
AMDAHL 5860	13.0	2,148	35.0
PYRAMID 90X	0.9	213	1.3
TOTAL	17.5	2,848	39.2
1986/87 (Estimate)			
(1) DEC 2060	1.8	500	2.7
AMDAHL 5860	13.0	2,300	38.3
PYRAMID 90X	0.9	220	1.5
TOTAL	15.7	3,020	42.5

Mainframe Training

— Ernie Froemel

The Computation Center will provide training in the use of our mainframes and associated software by arrangement during the Spring Quarter. There will be no regularly scheduled seminars.

In the past, the Computation Center has offered scheduled seminars on topics such as Bitnet, Script, SuperWylbur, Treatise, and Xset, as well as general introductions to the Amdahl, the DEC-20, and the Pyramid. The new approach is an attempt to allow users to identify those topics which may be particularly salient for this quarter. A minimum of ten requests for a topic is needed for us to setup a training session.

If you would like instruction on the use of mainframe hardware or software, please phone 702-7153 by April 10, 1987, and let us know your needs. If at least ten people request the same topic, we will arrange a training session.

Instructional videotapes are also available on a variety of topics at the Central Users' Site (Usite) located in Wieboldt 310. Further information is in the article entitled, "Instructional Videotapes at Usite."
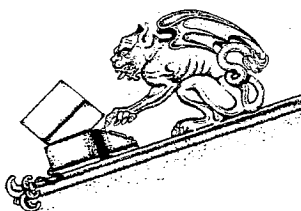
Instructional Videotapes at Usite

The Computation Center produces non-credit introductory and intermediate level videotaped computer classes for use by the University community. The courses cover a variety of computing topics. Two kinds of taped classes can be viewed at Usite: videotaped versions of seminars previously taught, and sessions especially designed and produced for the video medium.

The videotaped versions of seminars are available whenever Usite is open. The task-oriented videos are edited and narrated, and therefore cover topics in a succinct manner.

All of the videos may be viewed free at Usite. To use an available video, contact the Usite cluster assistant who will supply you with the tape and materials and set up the facility for your use, in exchange for your University identification. The assistant can also provide you with information on how to use the VCR to play the tapes.

Listed below are the videos which are currently available at Usite. A complete listing of the videos in our library, including course descriptions, is posted at the Usite cluster assistant's desk.

Videotaped Seminars

Computer Concepts and Terminology
Computation Center Facilities and Software
Fundamentals of Computing
Introduction to SuperWylbur
Introduction to the DECsystem-20
Introduction to Microcomputing
Overview of Text Processing
Text Processing in the IBM Environment

Special Video Sessions

Getting Started: An Introduction to Computing at
        Usite
Apple Computers at the University of Chicago
Using SED on the DEC-20
Muse I: Editing
Muse II: Formatting
Emacs I: Introduction to EMACS
Emacs II: Further Commands
Magnetic Tape Storage
Unix I: Overview
Unix II: Introduction to Files and Directories
Unix III: File Management & Security
Unix IV: Editing with Ed (line editor)
Unix V: Local Facilities
Kermit on the IBM PC
SuperWylbur I: Overview
SuperWylbur II: File Management
SuperWylbur III: Editing
SuperWylbur IV: Formatting
SuperWylbur V: RJE and Printing
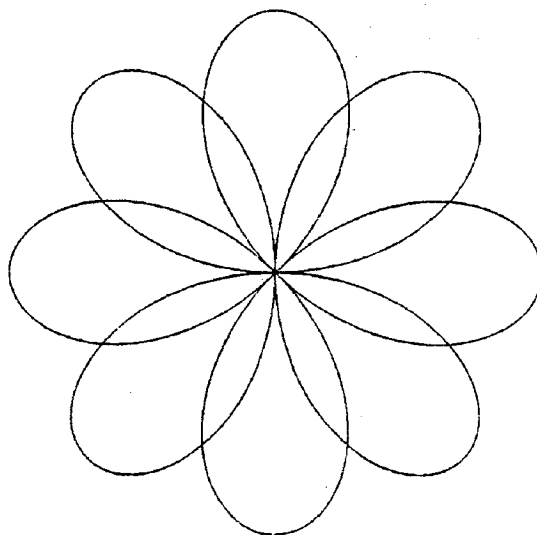
MVS

MVS T_EX

— *Melinda Shore*

The Computation Center is now running T_EX in batch mode on the Amdahl. Because we are running T_EX interactively on our two other mainframes and because running T_EX under TSO would not be a particularly pleasant experience for users, we have no plans to provide an interactive T_EX in the MVS environment. Also, because we are assuming that users who choose to run T_EX in the MVS environment are doing so because they want easy access to the Xerox printers, the procedure we've provided does send T_EX output directly to the printer.

Running T_EX is fairly simple. Here is some basic JCL:

```
//TEX   JOB   logonid,'programmer name',
//       MSGCLASS = X,REGION = 2000K
//   EXEC TEXTOX
//TEXSRC DD DSN = logonid.filename,
//       DISP = SHR
```

The TEXSRC DD card describes the T_EX input file. This file needs to be in card image, that is it can't be a SuperWylbur format file. Note that unless you indicate otherwise, by adding appropriate volume and unit parameters to the TEXSRC DD card, the operating system will assume that your file is cataloged. (See Memo 4155 for information on JCL.)

Options that can be placed on the EXEC card include:

TEXOPT =   You can pass commands to T_EX here. It's probably not a good idea to get fancy.

USERLIB =   The name of a PDS where T_EX can look for input files. It's concatenated onto the TEXINPUT DD card (described below). Note that the PDS must be cataloged.

DVIOPT =   Options to pass to DVIXER (the printer driver), as described in the article entitled, "Version 2.0 of T_EX Now Available" in another section of this *Newsletter*.

COPIES =   Number of copies of output.

T_EX expects to be able to open files dynamically. As a result, the MVS implementation has flexible but slightly complicated rules for searching for input files. In *The T_EXbook*, file names have a two-part structure, consisting of a "first name" and an "extension" (T_EX was originally written on a DEC-20). MVS, on the other hand, uses ddnames to communicate with files, and these are restricted to 8 alphanumerics, beginning with a letter. No periods are allowed. *T_EXbook* T_EX uses the extension part of the file name to distinguish among related files. For example, if *story.tex* is the first file input in a session, the resulting *dvi* file is *story.dvi* and the transcript is *story.log*. In the MVS version of T_EX, the *dvi* output file is always called DVI and the transcript is always called TEXLOG.

In order to satisfy the MVS ddname restrictions and still allow some kind of grouping of files according to first names, MVS T_EX uses the following scheme:

- First, a ddname equal to the "first name" is tried.

- If this fails to open a file, then a composite name is formed by concatenating up to five characters of the first name and three characters of the extension (e.g. *story.tex* would become STORYTEX). This composite name is then tried as a ddname.

- If this also fails, and if the file is an input file, then the extension is used as a ddname of a partitioned dataset and the first name is tried as a member. For example, *story.tex* would be tried as member STORY in a PDS described by ddname TEX.

There is an additional option to direct the search. If the filename in the T$_E$X input is preceded by a name followed by a colon (called an "area"), then this name will automatically be used as the ddname, and the first name and then the composite name will be tried as members. For example, if you try to read "texlib:story.tex", MVS T$_E$X will look for members STORY or STORYTEX in the PDS with ddname TEXLIB. If, after all this, T$_E$X still fails to open the file it is looking for, it will try the first name as a member of a partitioned dataset with ddname TEXINPUT.

It may take several tries to open a file, and as a result there may be several "DDNAME xxx NOT FOUND" messages in your job log. Don't worry about these. As long as the job ends with a condition code of 0000, there were no problems.

Remember that the T$_E$X input dataset must be cataloged, unless your DD card indicates otherwise.
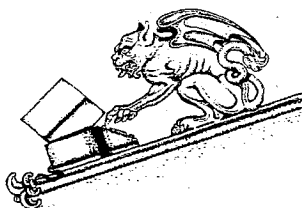
Conversion to IBM 3380 Disks

— Mike Willey

The Computation Center is converting from STC 8650 disk drives to IBM 3380 disk drives on the MVS/XA system, which is running on the Amdahl 5860. Installation of the new IBM disks will begin in late March with the conversion of XA operating system volumes scheduled first.

The majority of the IBM 3380s will be model "E" units which have twice the capacity of the model "D" units. The IBM 3380s will perform better and will be much more reliable than the outdated STC 8650 disks that the Computation Center has used since 1980. Our goal is to complete the conversion in the next 6 months. Some of the main differences between the STC 8650s and the IBM 3380D/E are noted in the chart at the end of this article.

The cost for use of the IBM 3380 disks has not been established, but the goal is to keep the cost comparable for equivalent bytes of storage. The capacity of an IBM 3380 disk track is approximately 2.5 times that of an STC 8650 track. Also, the capacity of a cylinder is increased by about 25%. Therefore, the conversion of single-track datasets to multi-track partitioned datasets (PDSs) is strongly recommended. This would make optimal use of the larger 3380 track and would minimize costs since the Center charges by the track.

Further information concerning the conversion can be found in the article "Easing Disk Conversion" in this *Newsletter* and in future updates to the Notice File. Those customers with dedicated volumes will be contacted concerning their conversion to the IBM 3380 disk drives.

CHARACTERISTICS	STC 8650	IBM 3380D	IBM 3380E
Data Rate* (Megabytes per Second)	1.2	3.0	3.0
Average Latency** (Milliseconds)	8.4	8.3	8.3
Average Seek Time*** (Milliseconds)	25.0	16.0	17.0
Capacity per Unit (Megabytes)	1,270.0	2,520.0	5,040.0
Capacity per Volume (Megabytes)	317.5	630.0	1,260.0
Tracks per Volume	16,650.0	13,275.0	26,550.0
Bytes per Track	19,069.0	47,476.0	47,476.0
Tracks per Cylinder	30.0	15.0	15.0
Cylinders per Volume	555.0	885.0	1,770.0

* "Data Rate" is the speed at which data can be transferred between the CPU and the disk controller.
** "Latency" is the time delay between a request for data and the start of data transfer.
*** "Seek Time" is the time required to position the access mechanism ("heads") of a disk drive.

Easing Disk Conversion

— *helen seren*

As you know from the article "Conversion to IBM 3380 Disks" in this *Newsletter*, the Center will be replacing all 3350-type disks with 3380 devices. Data on public volumes will be moved by the Center. Conversion of dedicated user volumes will be a joint effort by the user and the Center.

It has been less than three months since the MVS/XA conversion, everything has just barely settled down, and now we tell you to get ready for another conversion. Although moving data and changing JCL might conjure up midnight phone calls and long hours spent fixing errors, it needn't be that way. If you are prepared, and you start today, handling the disk conversion should present little difficulty.

Is there anyone out there who ABSOLUTELY, AL-WAYS abides by the following principles when allocating files on the public volumes?

1. You always let the system choose the volume when creating a new file. All your disk files are cataloged.

2. You always request disk space in blocks (instead of tracks or cylinders).

3. In JCL, you always refer to disk devices as UNIT = SYSDA or SYSCR (instead of UNIT = 3350).

If you obey the three rules above, you can skip the rest of this article. You may not even notice that your data has been moved, and all of your JCL should continue to work properly.

But maybe you have some track allocations or specific volume references scattered throughout your JCL. If so, here are some things you should know:

- This conversion will take longer than one Sunday test time. Both device types will be on the system for a while. We expect to use different names for the 3380 devices. For example, public 3380s might be called STORnn instead of PUBnnn.

- Since a 3380 can hold more data than a 3350, data from two or more 3350 packs may end up on a single 3380 volume. However, we will not move data from a single 3350 to more than one 3380 device. We will publish the target name of each disk volume and try to catalog each file as it is moved so you can find your data. If all your files are now cataloged, relax. But, if you have uncataloged files with the same name on more than one PUB pack, keep reading.

- A 3380 track is roughly 2.5 times the size of 3350 track. A one track 3350 file still needs one 3380 track. Although rates have not yet been determined, a 3380 track will cost more than a 3350 track. If you have many one-track files you will save on track charges by moving your files into partitioned datasets (PDSs).

- With our migration tools, we hope to give your 3380 files roughly the same percentage of "free" space as your 3350 files. Card-image files, such as user PROCLIBs or data files, are easy. Files with variable-length records or undefined records (all Superwylbur files) are more difficult. Users will have to check 3380 allocations, if size is critical.

- SAS files can be moved to the 3380s using the SAS PROC COPY. We have spoken with the SAS vendor and expect no difficulties. However, they did warn us of the following potential problem:

  If you had a SAS file on 3350 disk which you copied to tape using SAS PROC COPY, the same function, SAS PROC COPY, may be used to restore that file from tape to 3380. However, if your tape copy was created with anything else (IEHMOVE, IEBGENER, MOVESTOR, FILEBOL, etc.), it may not be restorable to 3380. We'll determine this as soon as a 3380 is available, and let you know what we have found out.

Here are things you, the user, can do to ease the disk conversion:

JCL Changes

The Center will provide some tools to assist you in changing your JCL libraries. Here are a few items to think about right now:

UNIT = 3350 will not work for 3380 disks. To keep things simple, change your JCL UNIT references to the generic **UNIT = SYSDA**. You can make the change today and it will work for 3350s, 3380s and almost any disk we're likely to get in the future.

VOL = SER = PUBnnn or almost any direct volume reference will have to be changed. If you must have a specific volume reference, then you'll have to scan and change JCL each time we move a 3350 disk. Otherwise, remove volume references and rely on the catalog.

Examine your JCL for file allocations. A 3350 track gives you about 19K bytes. A 3380 track gives you 47K bytes. Do you need 10 tracks of 3380 for a file that required 10 tracks of 3350? Probably not. If an allocation can be changed to blocks, do it today and minimize your disk storage bill.

File Cleanup

Check for duplicate filenames. Run the USERV-

TOC program to find out what files you have today and where you have them. List all your catalog entries. If you have a file called *logonid.myfile* on PUB001 and a file on PUB002 called *logonid.myfile*, and we want to migrate all files on either of those 3350 disks to a 3380 called STOR01, how will we know which file to put on STOR01 and what to do with the other? If you have uncataloged files with the same name on more than one PUBnnn pack, rename or scratch the extras.

To make this disk conversion easy, follow these suggestions and watch for more information in the Notice File and in the logon messages. Once we begin, there will be a 3380 hot-line and on-line conversion status reports to keep you current. If you have questions or want to discuss migration of a dedicated volume call Mike Willey at 702-7617.

SuperWylbur Version 3.7 to be in Production

— *Gary Buchholz*

SuperWylbur Version 3.7 will soon be installed into the MVS operating system. The MVS/XA conversion was completed in mid-December 1986 without the inclusion of this MVS/XA version of SuperWylbur.

Although the installation of this new version of SuperWylbur is primarily, in effect, an implementation change to address the XA environment, it does result in some enhancements. Watch the Notice File for up-to-date information on the conversion. The SuperWylbur command *help v37new* will display a summary of the enhancements in, and identify possible difficulties with, the new SuperWylbur.

TSO Then, Now, and in the Future

— *Ron Thielen*

A Little History

TSO has been changing over the last few years, and the improvements have accelerated with the installation of MVS/XA. Improvements back in the SVS days tended to be commands and CLISTs which were either homegrown or in the public domain. These provided some useful facilities, but were often difficult to maintain or enhance. They also tended to make our TSO look different from TSO on any other IBM system.

The next class of changes was a direct result of full screen access to TSO via the protocol converters. This provided the basis for future enhancements, because most commercial TSO software is designed around the IBM 327x terminals, which 7171 protocol converters emulate. The 7171s also provide our on-campus users with access up to 19,200 baud and relieve the burden on our other, heavily used, communications equipment.

At first there were only a few basic full screen facilities available. However, the TSO users' environment soon permanently changed with the introduction of ISPF and ISPF/PDF.

The trend developed towards installing vendor-maintained software packages which had a large user community outside the University. This meant that someone (the vendor) was actively working to enhance and maintain the product. This also meant that our TSO environment would be basically familiar to anyone coming to the University with prior TSO experience.

More Recent History (Where We're at Now)

The latest change to TSO was the installation of TSO Extensions (TSO/E) from IBM. TSO/E was installed as part of the MVS/XA conversion and has been in use since December 20, 1986. TSO/E is IBM's strategic direction for TSO. All future enhancements to TSO made by IBM will be in TSO/E.

Although at the time of this writing, we are running release 2.1, by the time you read this we are likely to be running release 3 of TSO/E. Some of the features of both releases are outlined below. On-line help is available for most of the features described.

TSO/E release 1 and 2 features:

Interactive Data Transmission Facility (IDTF)

IDTF provides a simple way to transmit and receive datasets or messages to or from another user. The other user may be on the same system as you or on another system connected to ours, e.g. via Bitnet. IDTF is implemented through the TRANSMIT and RECEIVE commands. The limitation on the use of TRANSMIT and RECEIVE over Bitnet is that not all other Bitnet sites can process TSO/E transmitted files. Only other TSO/E sites or VM/CMS sites can handle this type of data. In general, we recommend that you continue to use MAIL for Bitnet communications. We will work on integrating MAIL and IDTF over time, and keep you informed of changes via the *Newsletter* and the Notice file.

Session Manager

The TSO Session Manager provides full screen TSO users with a way to better manage their terminals. With Session Manager you can split your screen horizontally or vertically, define program function keys, keep a log of your session which may be scrolled through, and tailor the layout of your screen and terminal environment. Session Manager does not interfere with other full screen programs, e.g. ISPF. If you enter ISPF while running Session Manager, the Session Manager gives up control of your terminal until you exit ISPF. To use the Session Manager, you must logon to TSO with a different JCL PROC. Type "PR(SMPROC)" on the same line as your logon-id when logging on to TSO.

CLIST Enhancements

TSO/E provides many enhancements to the TSO CLIST language. Some of these improvements include support for upper and lower case, the ability to trap SYSOUT data in CLIST variables, and control over the level of recursion when evaluating a CLIST command. Anyone with an interest in coding CLISTs should obtain the IBM manual, "TSO Extensions CLISTS: Implementation and Reference." A complete list of appropriate TSO manuals may be found at the end of this article.

ALLOCATE, FREE, and SUBMIT Improvements

ALLOCATE is the most frequently issued TSO command. You may not realize this because many of the commands you enter are really CLISTs which may perform many ALLOCATEs. The utility of the ALLOCATE command was improved through the addition of many new operands and better performance. Additional operands and improved performance were also incorporated into the FREE and SUBMIT commands.

MVS/XA Support

TSO/E makes good use of MVS/XA's ability to address 128 times as much virtual memory as the old 16 megabyte limit. Many TSO service routines and work areas now reside above the 16 megabyte line. TSO TEST supports the testing of programs which use 31 bit addressing.

TSO/E Release 3 features:

Miscellaneous

TSO/E Release 3 includes additional CLIST functions and built-in variables, as well as improvements to IDTF, ALLOCATE, and SUBMIT.

TSO/E Enhanced Connectivity Facility

Enhanced Connectivity provides an improved environment for IBM PC connection to the MVS system. We will be evaluating the use of Enhanced Connectivity for IBM PC users, as well as for users of other microcomputers, over the next several months.

The Information Center Facility

The Information Center Facility provides a more task oriented and, perhaps, friendlier entry path into ISPF based services. Since the Information Center Facility, as supplied by IBM, is designed to interface with many IBM products which we do not currently support, we will not be implementing it in the near future. However, its extendability provides us with means for tailoring it to our environment, and we will be evaluating it for possible future use.

Other Recent Changes

The TSO Superset Utilities

At the time of the MVS/XA conversion, we decided to replace the old IBM TSO Dataset Utilities: COPY, MERGE, LIST, and FORMAT. These had not been supported by IBM for many years and had never been enhanced to take advantage of full screen terminals. The TSO Superset Utilities completely replace the old programs and add a few functions of their own: COMPARE, FSHELP, PRINTDS, and TSOSORT.

For more information on these programs use the TSO HELP command, or FSHELP if you want to try full screen help.

The Barilan ISPF Interface to UCLA/Mail

The installation of TSO/E made it possible for us to install a new ISPF interface to our mail system. This ISPF interface, designed in Israel, is the one which all other UCLA/Mail users around the world are using. It is more functional than our old ISPF/MAIL interface, and comes with tutorials and on-line help to make it easier to learn.

The Future

While we can't predict what IBM has in store for TSO, we can be sure that it will be around for some time. It is safe to say that the future will continue to be dominated by full screen software. IBM has been lowering the price of full screen terminals continuously over the past several years. Protocol converters will continue to be enhanced (expect to see 132 column support at the University within the next few months).

We will continue to evaluate new facilities, such as Enhanced Connectivity and the Information Center. Some old programs may be updated, e.g. Kermit file transfer through the 7171, while others may be replaced with more sophisticated equivalents.

Whatever happens, we will keep you informed through the *Newsletter*, the Notice file, logon messages, and news flashes. .

Bibliography

The following manuals may be ordered from IBM through the Center's Business Office:

GC28-1061   TSO Extensions General Information
SC28-1333   TSO Extensions User's Guide
SC28-1304   TSO Extensions CLISTs: Implementation and Reference
GC28-1310   TSO Messages

SC28-1307 TSO Extensions Command
             Language Reference
GX23-0015 TSO Extensions Command
             Language Reference Summary
               (a pocket reference guide)
SC28-1305 TSO Extensions Session Manager
             Terminal User's Guide
SC28-1306 TSO Extensions Session Manager
             Program Reference

GC34-4041 ISPF and ISPF/PDF General
             Information
SC34-4024 ISPF/PDF Reference
SC34-4018 ISPF/PDF Edit Macros
SC34-4021 ISPF Dialog Management Services
SC34-4022 ISPF Dialog Management Services
             Examples
SC34-4023 ISPF/PDF Services
SC34-4020 ISPF & ISPF/PDF MVS Diagnosis
SC34-4025 ISPF/PDF Library Management

The MVS-Ethernet Connection

— Ron Rusnak

The Computation Center will be connecting the Amdahl 5860 running MVS/XA to the University Ethernet. The connection will be made with a combination of hardware from Advanced Computer Communications and software developed at the University of California at Los Angeles. The system will be using the Internet TCP/IP protocols.

The interface will provide for File Transfer (FTP), Mail (SMTP), and Terminal to Host service (TELNET). Users of Ethernet connected machines on campus, as well as those connected to the Internet, will be able to send and receive files from MVS/XA, which has host name UCHIMVS1, using FTP.

Such users will also be able to logon to MVS via Ethernet as they do via Gandalf class codes *mvs3*

through *mvs48*. Full screen facilities accessible through Gandalf class *vtam* will not be available, but are being considered for future implementation. Users on MVS/XA will be able to TELNET and logon to other Ethernet connected systems on campus, but will not be able to utilize the full duplex capabilities of those machines. Therefore, they will be unable to use such programs as VI or EMACS.

The SMTP mail facility will decrease the delivery lag of mail by simplifying the transmission route.

Through a specialized use of SMTP mail, users of other Ethernet connected machines on campus will be able to submit jobs to be run on MVS/XA.

We are planning to develop methods for users of other Ethernet connected machines to easily direct output to the MVS/XA system's Xerox printers.

The current time-table for implementation provides that the interface will be operational by July of this year.

Script Version 86.1 in Production

— Melinda Shore

Version 86.1 of Waterloo Script is now in production. While this new version does not contain many changes to the Script language itself, output device support and font treatment have been generalized sufficiently to make it possible to generate output for a variety of printers and phototypesetters. In particular, a PostScript driver is available now, and drivers for the Xerox 2700 and 9700 printers will be available very soon. We are also planning on providing a version of Treatise that will work with proportionally spaced fonts on the Xerox printers.

PostScript support is now part of Waterloo Script.

You can have Script generate PostScript files by specifying "POSTS" as a runtime option. POSTS supports all of the fonts included in the Apple LaserWriter + ROM. You will need to use the .DF control word to define the fonts you intend to use, and the .BF control word to invoke the font. Watch for announcements on the availability of pertinent documents.

The Xerox 2700 driver supports both proportional and monospaced fonts on the 2700 printer with dynamic font downloading, making it attractive to people developing their own fonts. We will be providing a standard set of fonts. A manual on using Script with the Xerox 2700 printer will be available when the driver is ready.

We have acquired a post-processor for the Xerox printers from Texas A & M University. This post-processor makes it possible to use proportional fonts from Script. It also allows users to embed EPIC graphics in their text documents, which means that users will be able to generate graphics using SAS or DISSPLA, and include them in their text. Again, a manual will be available describing in detail how to use the post-processor, and a new version of Treatise will be written to provide full access to the features of the post-processor while complying with the requirements of the Dissertation Secretary.

TAG - Epic (Xerox) Output

— *Dorothy Raden*

The Telagraf graphics system for making scientific, bar, pie and text plots now supports the printing of plots on the Xerox 9700s, known as XEROX or EPIC in the Telagraf device selection list. EPIC is the name of the underlying Xerox software that drives the Xerox 9700 from our graphics systems.

When you wish to send a plot to the Xerox 9700

printer, simply invoke Telagraf on TSO as follows, when you have the READY prompt:

1.   TAG EPIC(Y) < cr >

2.   Specify XEROX or EPIC as your primary or secondary device when your Telagraf profile (TAGPRO.DATA) is built. The profile is built when you answer all the questions before the SPECIFY FILES prompt.

3.   Specify "300" to the prompt:
     'ENTER PLOTTING RESOLUTION
     THE CHOICES ARE 50 60 75 100 150 300.
     ENTER CODE:'

4.   Respond with "1" to the prompt:
     'ENTER PENWIDTH:
     THE CHOICES FOR OPTION MUST
     RANGE BETWEEN -10 and 10
     ENTER OPTION:'

5.   Reply "2" to the prompt:
     ENTER DRAWING ORDER:'

6.   After your graph is designed, enter GO if your primary device is the XEROX/EPIC type, or enter SEND if your secondary device is the XEROX/EPIC type.

For the other prompts, see Memo 4369.

The job number of your plot output is the TSO session #Tnnnn. You can discover this number by quickly entering IOF after you QUIT Telagraf and see the READY prompt. Enter END to leave IOF.

Delivery code (USIT is the default) may be specified for your plot output only through the Access Control Facility (ACF) in TSO.

Thus, to change your delivery from USIT to OSBN, logon to TSO and enter the following after the READY prompt:

ACF < cr >
CHANGE logon-id TSOACCT(,OSBN) < cr >
END < cr >

Finally, LOGOFF TSO. The OSBN delivery code for TSO plot output or any spun TSO output will be in effect for subsequent TSO sessions.

NOTE: The number of copies and forms type may also be specified on the TAG statement for XEROX 9700 output from TSO, in the following manner:

TAG EPIC(Y) COPIES(10) FORMS(NHOL)

Fortran-77 Moves Ahead on MVS

— Don Goldhamer

As use of the VS-Fortran compiler increases, the Center is taking steps to remove the obsolete and unsupported Fortran-G and Fortran-H extended compilers later this year.

One of these steps is the conversion of our many subroutine libraries — libraries which support mathematical, statistical and graphics applications — to VS-Fortran. Generally, as each library is converted, the new VS-Fortran library version is named by extending the original name. Thus,

SYS2.USERLIB becomes SYS2.USERLIBV,
SYS2.IMSL becomes SYS2.IMSLVS,

and so on. These VS-Fortran compatible libraries may be specified in the "USERLIB = ..." parameter of the FORTVCL, FORTVCLG, FORTVLG and FORTVG cataloged procedures, in the same fashion as with the older compilers.

In the case of a few, seldom-used subroutine libraries, we plan to eliminate the compiled version of the library and make the Fortran source available. These libraries are noted below.

VS-Fortran libraries available by Spring quarter:

    SYS2.IMSLVS
    SYS2.BMDP87
    SYS2.USERLIBV
    SYS2.ULOADLBV
    SYS2.PLOTLIBV

VS-Fortran libraries to be made available during Spring quarter:

    SYS2.DISSPLAV
    SYS2.TEKLIBV

VS-Fortran libraries to be available only in source form:

    SYS2.MATHLIB.UOC.SOURCE
    SYS2.MATHLIB.LINPACK.SOURCE
    SYS2.MATHLIB.AMDLIB.SOURCE
    SYS2.MATHLIB.FORTSSP.SOURCE
    SYS2.MATHLIB.FUNPACK.SOURCE
    SYS2.MATHLIB.UNICARB.SOURCE
    SYS2.MATHLIB.FFTLIB.SOURCE
    SYS2.BMD.SOURCE

IBM Pascal/VS Now Available on MVS

— Gary Buchholz

IBM Pascal/VS is now available on the MVS production system. It adheres to the current ANSI and ISO (Level 0) standard with a number of IBM extensions. Batch access is through the default cataloged procedures:

    PASCC — compile only,
    PASCCL — compile and link edit,
    PASCCLG — compile, link and execute.

TSO users can compile interactively using the PASCALVS command or ISPF option 4.6. IBM's

Pascal/VS also includes an interactive symbolic de-bugger useful in TSO.

Pascal/VS programmers may wish to order the "Language Reference Manual" and the "Programmers' Guide" from IBM through the Center's Business Office. The order numbers are SH20-6168 and SH20-6162 respectively.

TOPS-20

DEC T_EX

— Melinda Shore

T_EX on the DEC-20 behaves very much as described in *The T_EXbook*. However, there are some special features of T_EX on Tops-20 of which users should be aware.

To run T_EX, simply type "TEX" at the @ prompt. It will then start up as described in *The T_EXbook*. When you see the double-asterisk prompt (**), it is waiting for the name of an input file or for a control sequence. If you reply "story", T_EX will look in the current directory for a file called STORY.TEX. If it fails to find the file, it will look for TEXIN-PUTS:STORY.TEX instead. Note that you can override the default ".TEX" extension by giving another (possibly null) extension. For example, you could give the command "\input foo.bar" or "\input baz.", and T_EX would look in your connected directory for FOO.BAR or BAZ., and then in TEXIN-PUTS: if necessary.

T_EX checks the command line by which it was invoked and treats anything after "TEX" as input. Saying "TEX STORY" at the TOPS prompt will produce the same results as if you had invoked T_EX and said "story" at the double asterisk prompt. In fact, you can give any sequence of T_EX commands on the command line. Additionally, T_EX will remember the last command line you gave it, so that the next time you invoke it as just "TEX", it will pretend you said the same thing to it as last time. If you want to inhibit T_EX from repeating the last command, say "TEX \", which will make T_EX forget that you ever gave a command line.

Control-C will stop T_EX, just as with most programs, but any files it was creating will not be in your directory. The best way to stop T_EX is to type *control-G*. This interrupts T_EX and causes it to print a message indicating what input it was reading. You'll have an opportunity to either exit from T_EX or have it continue where it left off.

Control-O also works in T_EX much as it does in other programs. You don't have to worry that you might miss something important, though, because T_EX will override your *control-O* before it prints out a message for an error that would cause it to stop.

Because we do not yet have the CM fonts for the Xerox printers, users who want to print their T_EX'file on a Xerox printer need to load a different format file than the one provided by default. When you invoke T_EX, include "&APLAIN" as the first thing on the command line following "TEX". Your print jobs are guaranteed to fail if you do not.

When you exit T_EX, something like the following will appear at the TOPS prompt:

@TEXSPOOL: DS2:< your.username >STORY.DVI

assuming that your connected directory is DS2:< your.username > and that STORY.DVI is the output from the T_EX session just completed. If you hit the enter key, it will put you in the prompter for DVIXER, the program that prints *dvi* files on the Xerox printer. DVIXER can also be called at the TOPS prompt. DVIXER will ask you for MVS accounting information (login-id, etc.), and for DVIXER options. These options are explained in the article "Version 2.0 of T_EX Now Available" in this *Newsletter*. DEC users in particular need to be aware that we do not yet have a non-held sysout class to use with DVIXER, so that print jobs will wait 24 hours before printing unless released explicitly. There is no way to release MVS jobs from the DEC. Users who do not want to wait 24 hours for the job to be released will need to log on to the Amdahl and release the job from there.

2400 Baud Telenet Available for Chip

A new network address, 312437, allows access to Chip at 2400 baud via Telenet. This address is in addition to the address 312436 which allows access at 300 baud, and the address 31236 which is used for 1200 baud access.

Additional information about Telenet may be found in the article entitled, "Telenet Network Address Changes" in this *Newsletter*.

Version 14 of Pascal Now In Production

— Beth Christy

The Pascal compiler now implemented on DECsystem-20 Chip is the best version of Pascal available to the Computation Center. It supports conformant arrays, parametric procedures, wildcards in file specifications, random access to input files, string I/O, and many other handy features. On March 1, the version of Pascal that had been in TEST on the DEC-20 for quite some time (version 14) was installed in production. This "new" version generates significantly smaller code, and can generate code which uses extended addressing (via the /EXTEND switch or the (*$X + *) compiler directive), thereby allowing for much larger programs.

The new and old versions are not compatible at the object code level. That means that if you have a Pascal program made up of two or more separate modules, and if you compile one of the modules

using the new compiler, you can't simply load the newly generated .REL file with the .REL files created by the old compiler. If you recompile one module, you must recompile all of them before you load them together.

A great deal of effort went into ensuring that the new compiler is compatible with the old one at the source code level. Programs which compiled under the old version should also compile under the new version. The resulting executables should give identical results when they run. Nevertheless, there are some minor inconsistencies. All Pascal programmers should be aware of the following three points:

i. Because of a change in register allocation, one less register is available. Therefore, programs with deeply nested WITH statements may not compile, giving the error message "Too many nested WITH statements". If you get this message, you will have to remove one WITH statement and use a qualified name instead.

ii. Because the new version of Pascal uses Tops-20 entry vectors, *run offset* no longer applies. Therefore %CCLSW will always be zero. A future version of Pascal may make %CCLSW meaningful again.

iii. Because of the way extended addressing is implemented, if your programs are made up of two or more modules, you must load the main module first (even if you're not using extended addressing). If you don't load the main program first, the loader will complain that .XSTRT is not defined.

In addition, programmers who want to take advantage of the extended addressing feature should note the following:

i. To hold an extended address, the size of a pointer variable is 36 bits, so it is not possible to have anything else in the same word as a pointer. In particular, any PACKED RECORD which contains a pointer should be looked at closely.

ii. JSYS calls using the "a:b" construct to build halfwords may cause trouble. However, the most common use of this construct is probably to make byte pointers (i.e., "-1:b"). This is not necessary if "b" is a packed array of characters, since simply specifying "b" will put a byte pointer into the accumulator anyway.

iii. When it is necessary to have a local address (as required by some old JSYSes), NEWL (a new function in this release) should be called instead of NEW. This will allocate memory in the same section as the code.

The above caveats, as well as a more complete description of the differences between the new and old versions of the compiler, are contained in NOTES:PASCAL.DIF. Also, the reference manual available in MANUALS:PASCAL has been updated to describe version 14 of the compiler, and can be printed off-line as R79 or DECPASC using Doclist. And two new documents are available:

NOTES:PASCAL.HEAP provides a short description of the Pascal Heap Manager, and

NOTES:PASCAL.ISO describes the conformance of the version 14 compiler to the ISO Pascal standard.

PYRAMID/UNIX

Unix T_EX

— Melinda Shore

Running T_EX in the Unix environment is very much like running T_EX under TOPS-20. (See the T_EX article in the TOPS-20 section of this *Newsletter*.) T_EX commands can be passed on the command line. If you specify the name of a file that doesn't appear in your current directory, T_EX will follow a search path to find it. Users can establish their own search paths by setting the environment variable TEXINPUTS. The syntax for doing this in *csh* is just like setting your default search path for programs. Thus, if your user-ID is "abcd",

setenv TEXINPUTS .:/u1/abcd/lib:/usr/local/lib/tex/macros

would tell T_EX to first look in the current working directory ("."), then in a user directory (/u1/abcd/lib), and finally in T_EX's default directory (/usr/local/lib/tex/macros). This command would normally be placed in a *.cshrc* file.

T_EX calls *vi* as the default editor when you respond "e" to T_EX's error prompt. The environment variable TEXEDIT controls which editor T_EX starts, and can be used to override the default. It should contain a string with %s indicating where the filename goes and %d indicating where the decimal line number (if any) goes. See the *man* page for more information about running T_EX under Unix.

Because we do not yet have the CM fonts for the

Xerox printer, users who want to print on it will have to make sure that an alternative *plain.fmt* is loaded. When invoking T_EX, type "\&am_plain" as the first thing on the command line following "tex". The backslash is needed before the ampersand to keep the shell from interpreting the ampersand as a special character.

Currently, the only way to print *dvi* files on the Xerox printer from sphinx is to *ftp* the files to Chip, and run DVIXER there. To avoid file corruption during transmission, be sure to tell *ftp* "type tenex" when hosted on sphinx, or "type L 8" when hosted on Chip. Getting files printed will be much more transparent when the Amdahl is put on the Ethernet.

We will have a *dvi* driver available for the Talaris 1200 soon. An announcement will be made when it is ready.

Pyramid Software Report

— Tom Barron

Recently installed software on Sphinx includes the file transfer program *xmodem* and the file perusal progam *less*. To see *xmodem* subcommands and options simply enter *xmodem* at the command prompt. Using *less* is rather like using the standard browsing program *more* except that one can scroll backwards, a feature valuable when viewing *man* pages. To use *less* rather than *more* when using the *man* command put the following line

    alias man 'man - \!* | less'

in your *.cshrc* file.

Version 18 of *GNU emacs* has been installed. *GNU emacs*, which is quite close to the *emacs* available on Chip, is invoked by typing *gemacs* at the command prompt. The new version boasts faster string

searching, better memory usage, and many new features, including the ability to edit, via *ftp*, files residing on other internet machines on which you have an account. In addition to the *man* page for *gemacs* there is extensive help within the editor itself. For instance, typing ' ^ ht' within *gemacs* will put you through the *GNU emacs* tutorial, while ' ^ hn' will allow you to read about features new to version 18.
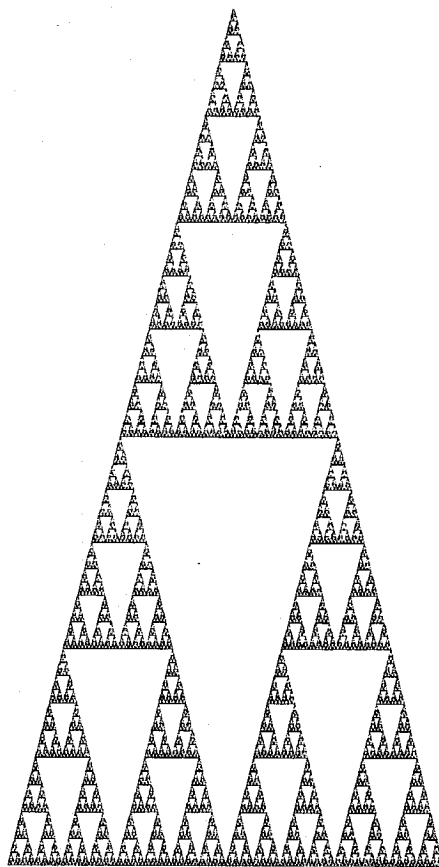
MICROCOMPUTING

D&D Lab: Hot New Items

— *Marc Jacobson*

The following new hardware and software now make their home in the Demonstration and Development Laboratory, at 1155 East 60th St. To make an appointment to have equipment demonstrated, or to examine software yourself, call 702-7178. Software and hardware now in the Lab include any software or hardware listed in MICLAB on the DEC-20 as well as any of the following new items:

New Hardware:

The much-heralded **Compaq Deskpro 386** is here: it has a 32-bit 80386 microprocessor, 40Mb hard drive, 1.2Mb floppy drive, EGA and CGA graphics cards, a megabyte of RAM; it runs at 16MHz, and can utilize CEMM (Compaq Extended Memory Manager) to access RAM above 640K. Connected to the Compaq 386, we have a **NEC Multisync high-resolution monitor**, a sharp monitor with brilliant colors.

There is a new **HP Vectra** in the Lab: it has a 20Mb hard drive, a 12" EGA compatible color monitor (not quite the NEC Multisync, but very good), 640K of RAM, HP's own EGA, and a 1.2Mb floppy drive. Attached to the Vectra is an **HP ThinkJet**, a tiny and popular dot-matrix printer: 150 cps and quiet (under 50 dB).

We now have a Tandy PC/AT compatible, the

Tandy 3000HD: with an Intel 80286, it runs at 8MHz, has 640K RAM, a 40Mb hard disk drive, and a 1.2Mb floppy drive. With it is a high-resolution **TRS-80 CM-1 color monitor**. Both MS-DOS 3.2 and Tandy's version of XENIX, a multiuser operating system, will run on the 3000HD.

For a limited time only:

AST TurboScan- A 300 dpi scanner for the Macintosh 512k and Mac Plus computers. It makes use of TurboScan software which gives you wide control over gray tones, density, etc. TurboScan can output images into several formats including Compressed, MacPaint, PostScript, and Gray Post-Script.

C.ITOH ProWriter Jr.- An impact dot-matrix printer which prints at 105 cps. It can print in 40, 66, 80 and 132 columns. It makes use of an "ink roll" as well as a seamless, continuous ribbon with a horizontally-positioned print head whose life-expectancy is 50 million characters.

C.ITOH C-310/15 XP- A printer that uses an impact dot-matrix print head, and prints in either the IBM mode or an Epson FX-80 mode. You can download custom characters to it, and print in a letter-quality, or near-letter-quality mode. It will do graphics, of course, as it is dot-matrix, and with a serial-to-parallel adapter, (e.g., Microsoft's MacEnhancer) it will connect to a Macintosh. It will print at 300 cps in draft mode, at 50 cps in near-letter-quality mode, and at 33 cps in letter-quality mode.

New Software for IBM PC-compatibles:

dBrun III Plus, v. 1.0 by Ashton Tate: an applications development assistant for dBase III applications.

Let's C by Marc Williams: a C programming language compiler.

Lotus Freelance, version 1.0: a graphics editor which can be used to create "word slides", diagrams and drawings, or to edit 1-2-3 graphics files.

Microsoft Project, version 3.0: a project manager for IBM PC/XT/AT Compatibles.

Notebook II, version 2.3 by Pro/Tem: a text-based database manager. It can be used to create a notecard filing system, for example.

WordMarc Composer, by Marc Software International: a full-featured word processing program. It can be used to create equations within documents.

New Software for the Macintosh:

Aztec C, version 1.06l, by Manx: a C language programming system.

Learning Tool by Arborworks: software which incorporates principles of cognitive psychology to help students organize course notes, write term papers, and study for exams.

Logo, version 1.01, by Logo Computer Systems: formerly produced by Microsoft, a programming language for graphics creation.

MacLightning version 2.0 by Target Software: a spelling/grammar checker which uses an 80,000 word Merriam Webster dictionary and operates as a desktop accessory.

Microphone, version 1.0, by Software Ventures: a communications package which allows terminal emulation, file transfer, etc.

PageMaker, version 1.1, by Aldus: a page layout/composition package.

Ready,Set,Go!, version 3.0, by Manhattan Graphics: a page processing package for layout and composition of text and graphics.

Please consult the MICLAB program on the DEC-20 at any time for complete listings of software and hardware in the Lab, by entering "MICLAB" at the "@" prompt.

Public Downloadable Directories

— Stuart Schmukler

The Computation Center currently has a number of directories containing public domain programs, "shareware", and copyrighted programs, whose owners have allowed them to be freely distributed.

On unix, the files are in a set of subdirectories starting at */usr/sun/mac*. To download a file from these directories, you should first copy the file into your home directory or into */tmp*. Thus, enter:

cp /usr/sun/mac/news_src/Desk_Acc/rasnix.hqx ~

to get the file into your home directory, or

cp /usr/sun/mac/news_src/Desk_Acc/rasnix.hqx /tmp

to get the file into the general use */tmp* directory.

Note that the extensions *.hqx* or *.hcx* indicate a file that must be processed by the *binhex* program on the Macintosh or by *xbin* on the unix system to create an executable application or usable document.

Once you have copied the file to the appropriate directory, use either *macput* or *kermit* to transfer the file to your microcomputer.

On DECsystem-20 Chip, there are a number of directories which contain downloadable files. These are listed at the end of this article.

The directory DS2:<MICRO.MAC> has copies of files from Stanford's INFO-MAC archives. These include software, "shareware," and Macintosh technical notes, in addition to bulletin board files. Type "MM BB INFO-MAC" to look at the current digests.

The TEST:<TEST.KERMIT> directory has copies of Kermits from Columbia University. These Kermits have NOT generally been tested for use at the University of Chicago. However, they are available for users to download to their machines and try out at their own risk. Watch the Notice file for informa-

tion on updates to this directory.

The directory DS2:<SYSTEM.KERMIT> has Kermits that have been tested and are being distributed through the Center Business Office. They are kept on-line for Kermit users to download.

The MICRO.CPM directories on structure CS2: listed below contain a variety of files for users of micros with CPM operating systems.

Directory	Contents	Last update
CS2:<MICRO.IBMPC>	BBoard INFO-IBMPC archives	13-Feb-87
CS2:<MICRO.CPM>	Files for CPM users	16-Jul-85
CS2:<MICRO.CPM-PASCAL>	" " " "	03-Apr-83
CS2:<MICRO.CPM-RAINBOW>	" " " "	19-Jul-83
CS2:<MICRO.CPM-SMALLC>	" " " "	19-Mar-83
DS2:<MICRO.MAC>	Software and INFO-MAC Archives	27-Jan-87
TEST:<TEST.KERMIT>	Kermit from Columbia Univ.	15-Jan-87
DS2:<SYSTEM.KERMIT>	U of C tested Kermits	28-Feb-87

Diskettes and An Ounce of Prevention

— *Ben Jones and Dorothy Raden*

Although under normal circumstances microcomputer diskettes store data safely and conveniently, diskettes and the data they contain are vulnerable to damage from a wide range of physical, magnetic and internal sources. Fortunately, attempts to recover lost data are often successful. However, given the uncertainty inherent to such attempts at data recovery, it is prudent to follow certain procedures that ensure that any data loss is minimized.

Diskette Vulnerability

Many common things can damage diskettes. Everyone knows you should not spill coffee on your diskettes or fold them in half. There are, however, many less obvious dangers to diskettes. It is fairly easy to avoid them.

Physical Vulnerablity of Diskettes

The two main kinds of diskette are 3 1/2" diskettes and 5 1/4" diskettes. The 3 1/2" diskettes have a rigid plastic case and a metal shield which slides over the exposed recording surface when the diskette is not in use. These protect the recording surface much better than does the cover of the 5 1/4" floppies. The 5 1/4" diskettes have a flexible plastic cover and depend on a paper or plastic sleeve to keep dust and fingerprints off the recording surface.

You should not use a ballpoint pen to write on 5 1/4" diskette labels, since the pressure of the pen could damage or distort the recording surface. Don't bend or fold them or expose them to dust. Pencil eraser dust is especially bad because it uses pumice as an abrasive. Neither kind of diskette enjoys having things spilled on it.

Magnetic Vulnerability of Diskettes

Magnetic damage is less obvious than physical damage, but can be more destructive. Diskettes, like audio tape recorders, use a magnetic recording surface. Passing a magnet over the surface will erase diskettes just as it would music tapes.

Well, you don't have any magnets, you say. But magnets are far more common than one might think. Telephones which ring instead of chirp or beep, electric motors and stereo speakers all have magnets. Some paper clip holders, many hooks or clips or even shelves which stick to cabinets, and those stands which hold papers in view while being typed, may all have magnets in them. We do not recommend that you use a refrigerator magnet to stick a diskette to the refrigerator.

Other gadgets use magnetic fields which could harm the data on a diskette. The video monitor attached to your computer may gradually erase the data on a diskette if you leave it sitting on top of the monitor for several hours.

Internal Vulnerability of Data

Internally, your data is vulnerable to any malfunction of the microcomputer and to any error by the program it is running.

Any work you've done since your last save is stored only in the microcomputer's memory. Therefore, any malfunction that causes this memory to be erased will destroy all of that work.

The source of probably 90% of all diskette errors and loss of data is program error. Diskettes are usually fine sitting quietly in a box on a shelf somewhere. As soon as you put them into a disk drive, however, they are in danger. A "well-behaved" program will write a file on a disk and never make a mistake, never "crash" the system, and will provide for interruptions of power or mistakes by the person using it. It will allow

you to recover data from the disk even if the disk itself is physically damaged.

There are plenty of badly designed programs, however. There are even programs available as public domain software that have "worms", or code that actually clears out or damages software on your hard disk. We mention this not to discourage use of public domain software. Rather, we hope to encourage use of proper procedures.

Preventive Measures to Minimize Data Loss

Back Up Data Regularly

This leads us to the first rule of using computers: BACK IT UP! To back up something means to make a safe copy of it, as in "Do you have a backup copy of your dissertation that you've spent the last six years on, in case the dog eats it?"

The more valuable the document or program, the more extensive the backups should be. Some corporations store copies of their records in a different city, every single day. In general, most businesses will keep fairly up-to-date diskette copies in a separate building, in case of fire, or may make use of the companies providing such "off-site" data storage as a service. Your own precautions should depend on how you use your computer.

Suppose that a really serious computer error actually does occur, and that you lose not only what is in the memory of the computer, but what is on the floppy disk as well. This kind of error could be due to a "bug", or programming mistake, in the instructions the computer has just tried to execute. Alternatively, it could be due to a bad copy of a program which is normally "well-behaved". If this is the case, you may really lose a day's worth of work.

But whether you lose six days worth or six months worth of work depends on your backup procedure. You should have a copy of your work outside the computer, on a

backup disk, and should copy your work to it at the end of every session. For serious work, you should have a regular routine, and have at least two backup disks. After every session, copy your work onto the older version of the two. This way you have two copies of the current work, plus one copy of the work as it was prior to the last session. Then, if anything goes wrong during your current session, and damage is done to the diskette you are using, you still have the older version intact.

Under even more stringent conditions, you might make an extra copy to be stored in another office or building. When copyright matters are involved, you may want to keep not only a copy of a prior version of a document, but copies of all its previous versions as well, as a history of the work proving ownership.

Backing up your files is the only good way to ensure the safety of your programs and documents. If you have not kept backup copies before, you should start right now.

Save Work Regularly

Even with a "well-behaved program," data which is sitting in your computer's memory is at high risk until it is saved on a disk somewhere. A sudden power drop or surge, or a spark of static electricity from your shoes on the rug, can wipe out the computer's memory along with eight hours of work.

Saving your work frequently will minimize data loss due to a power failure.

If you save your document every twenty minutes or half hour, then only a really serious computer error would make you lose more than that last half hour of work. Some programs, such as Wordperfect, can be set to automatically save your work periodically, say every half hour.

Divide Work

In addition to simply backing up your work, you may want to divide your work among several disks. Diskettes are not terribly expensive, and you can easily afford to put your various projects on separate diskettes. Since disks are mainly at risk when they are in the computer, you should keep them out of the computer as much as possible. Don't keep your dissertation on the same disk as your grant proposal, at least until you are finished working on them. In case of disaster, if you have stored each document on a separate diskette, you lose only one document, not both. With large documents, put different chapters on separate disks, and merge them at the end for printing. Note that this would have the extra benefit of speeding up your diskette drive, as it would not have to sort through information scattered throughout the disk.

In case of disaster, having stored the documents separately should make the documents easier to reclaim, as the documents would not be dispersed across the diskette and there would be no mixing of various types of document format.

Recovery of Lost Data

But suppose you have just had a problem with your computer, have lost some important information, and have made no backups. What can be done?

Don't panic and don't despair. Often, apparently disastrous data loss can be recovered. It is necessary to proceed carefully as hurried attempts at rescue can make matters worse.

Warning to Macintosh Users

Note, in particular, that if you're on a Macintosh and you get the message "INITIALIZE OR ..." for a diskette with good data, DON'T SELECT "INITIALIZE"!

Recovery From Memory Damage

If your data was lost when your computer

crashed, don't turn off the computer. Sometimes the contents of the computer's memory will remain intact during a computer crash. In this case, there is a slim chance that it can be rescued, but only if the computer has not been turned off.

If the problem you are dealing with involves a damaged file on a RAM disk, and the computer itself did not crash, then many of the techniques used for rescuing files on floppy disks will work on the RAM disk, but only if the computer has not been turned off.

Note that if the damaged data or program was in use during the computer error, it might not be recoverable. In this case, DO NOTHING until you know exactly what you are doing and why.

Recovery From Disk Damage

If you are dealing with a disk which has developed a problem, do not try to copy anything to the disk, or allow any program to write on it. Make it a write-protected disk immediately. Under almost all circumstances, at least some of the data can be retrieved, and frequently all of it. However, writing anything onto the disk will generally erase data, some of which may be necessary for any rescue attempt. Work only with a copy of the damaged disk. Programs such as COPYWRITE, COPYIIPC, and COPYIIMAC are designed to make copies of disks which cannot be read by normal software, and then any attempt at rescue can be done with the copy.

In All Cases

Finally, if you don't know how to rescue data, stop where you are and get help from someone more experienced in microcomputing.

Some problems are very simple, and can be corrected with instructions over the phone. Other problems may require a particular piece of software, and a quick and

simple procedure may be all that is needed. Mistakenly deleting a file is such a problem.

Some problems may require an analysis of the disk directory to see if a "map" of the data on the disk can still be found. If worse comes to worst, the entire contents of a disk can be stored in a file on another disk, and you can search through it to reconstruct the information manually.

In Conclusion

Reclaiming diskettes is the hard way to go about protecting your data. The easy way is to save, separate and back up your data to begin with. So every time you use your computer, before you turn it off for the day, ask yourself how much work you would lose if your work disk were eaten by a bug, and if you don't like the answer, make a copy.

Back it up!

A Case Study of Office Automation

— Nancy Boyle - College Admissions Office

"If the rest of you want to live in the Dark Ages, go ahead, but I'm moving into the 21st century."
— Tim Heidinger, at University of Chicago Office of Admissions staff meeting.

Before the Macintosh entered the reception area at the University of Chicago College Admissions Office, the receptionist's duties were too few and required too much time. The receptionist's main tasks at the desk were to schedule interviews for prospective students with admissions counselors, mail out confirmations of those interviews, keep track of interview statistics and handle a wide vari-

ety of telephone inquiries. The workload was not very heavy, but each task required a good deal of the workday simply because of the cumbersome way it had to be handled. This made the work tedious and frustrating and the receptionist pretty cranky.

Scheduling interviews was probably the worst part of the position. The information for interview requests was recorded on 2"x3" slips of scratch paper and then eventually transferred to a paper mock-up of the schedule. These pieces of paper were hard to handle and far too easily lost. If a piece of the scratch paper was lost, the record of the request it recorded was also lost. If a student wanted to change the time or date of his or her appointment, a mad shuffling of papers ensued. Preprinted confirmation cards had to be filled out by hand for each interview.

Using the Double Helix program, we set up a relation allowing all pertinent information to be entered onto a screen created exclusively for appointments. As a result, the receptionist now has easy access to any of that information. In particular, if a student needs to reschedule his or her appointment, the receptionist can make the necessary changes almost effortlessly using the "quick query." In addition, a confirmation note can now be written for the student using a template. With a certain selection, confirmation cards can be run either for individual students or for a particular time frame. The cards are set up so that the confirmation note appears on the left hand corner of 4"x9" University of Chicago letterhead. The name and address of the student appear in a strategic position, allowing the card to be placed in a window envelope, thereby eliminating the need to address the envelope. The confirmation is personalized for each individual appointment and the operation runs much more smoothly. Finally, lists of the interview requests for a certain time period can be run and then written into the schedule mock-up. All in all, the information is well organized, and the time and effort needed to perform these tasks are substantially reduced.

Before our Macintosh was installed, the receptionist kept a written record of interview statistics and then graphed it on paper in a simple dot and line formation. This type of document served its purpose, but

did so with very little flair. Now, using the Excel program, the interview statistics are recorded on a worksheet and used to create pie charts, bar graphs and area graphs, all with very impressive results. The statistics of past years have also been entered on worksheets, enabling the receptionist to create comparison charts of past and current information. The charts produced through the Excel program not only yield more precise statistics, but present them in a wider variety of chart types. This makes our Dean very happy.

The Macintosh at the reception desk has been hooked up to the mainframe, allowing the receptionist to access a wide range of previously unavailable information. Consequently, she can now give answers to a variety of questions that previously had to be handled by someone else. Having this information at her fingertips enables the receptionist to respond immediately to students and parents, and so eliminates the aggravation of waiting for answers. Telephone requests for applications used to be recorded on a form and then given to the processing office to be entered onto the mainframe. The receptionist is now able to enter the information onto the mainframe as she receives it, thereby ensuring that the information available through the mainframe is always up-to-date.

One daily problem at the admissions office is determining why a student has yet to receive his application. This problem is now easily solved. Sometimes an address has been entered incorrectly. If this is the case, the receptionist can now correct the address immediately. On other occasions, a packet has been sent to the correct address, although the student has still not received it. In either case, a new packet can be sent out immediately. In fact, any error in the record of a student's information can be corrected in the reception area as soon as it is discovered, and no longer needs to be written up and sent to the processing office for correction.

Finally, with the Macintosh in the College Admissions Office, the student's file can be checked by the receptionist at any time during the application period to see if any of the required materials is missing. This function was previously handled by the processing office exclusively.

DEPARTMENTS

People

People who have joined the Center:

Andrew Brown, **Michael Montgomery** and **Leslie Wolke** are Stock Clerks in the Microcomputer Distribution Center. **Victoria Crawford** has joined the Center as a Staff Analyst in Information Technologies and New Services. **Paul Dembowski** has joined the Center as Production Expeditor in Production Services. **Meghan Gilmartin** is a Clerk with the Business Office. **Gregory Glasgow** is a Desk Clerk. **David Rosener** is a Jr. Programmer/Analyst I in the Library Systems Group. **Donald Tom** has rejoined the Center as Clusters Supervisor. **John Tomas** is a Documentation Specialist with Instruction and Documentation Services.

Transfers/Promotions within the Center:

Richard Lipinski and **Daniel Levy**, Cluster Attendants, have been promoted to Student Program Advisors.

People who have left the Center:

Lawrence Gryziak, Demonstration Laboratory Assistant, has taken a job with the Information Systems Planning Group. **Robert Hettinga**, Production Expeditor, has left to accept a job in Boston. **Martin Neudel**, Senior Programmer/Analyst in Administrative Information Services has accepted another job. **James Wolf**, Jr. Programmer/Analyst I, has left the Library Systems Group to take a job with NORC.

Open Positions at the Center

The following full-time positions were open at the Computation Center as of March 12. Detailed descriptions of the positions may be obtained from the Center's receptionist or from the person listed with each position. The University is an affirmative action/equal opportunity employer.

Senior Systems Programmer - Responsible for systems program development, installation, maintenance, performance analysis and tuning. Requirements include two to five years experience in one or more of the following operating systems: MVS, TOPS-20, Unix. Michael E. Willey, 702-7617.

Senior Programmer/Analyst - Responsible for installation and maintenance of application programs on the operating systems above. Requirements include superior programming skills and knowledge of minicomputers and microcomputers. Donald H. Goldhamer, 702-7166.

Senior Model 204 Programmer/Analyst - To participate in technical support of Model 204 programmers/users and in both mainframe and micro data base applications development. Requirements include three years on-line applications and data base experience. David E. Trevvett, 702-6018.

Senior Analyst - Responsible for consulting with the University on microcomputing, LANs, and advanced workstations. Requirements include two to three years experience, excellent interpersonal skills, significant experience with micros, especially Macintosh. George R. Bateman, 702-7174.

Programmer/Analyst - Responsible for analysis and programming support of the Center's billing and management reporting systems. Requirements include superior skills in PL/I. Peter B. Hayward, 702-8671.

Documentation

New Documentation Available

02/18/87 **R93** *System 1022 Host Language Interface*
Version 117B replaced the prior version.

02/18/87 **R92** *System 1022 User's Reference Manual*
Version 117B replaced the prior version.

02/05/87 **4377** *Student Guide to Instructional Computing Accounts*
Written to explain and illustrate how to establish and manage an instructional computing account. These accounts enable students to use Center computers for classwork computing.

02/02/87 **4142** *Printing Mailing Labels*
This memo details the different methods for producing mailing labels. Presently the Computation Center offers 1" and 1.5" labels on the impact printers as well as 1" labels printed on the Xerox 9700 laser printer. The 9700 labels are a new service through which users may print labels of much higher

quality than have been previously available.

01/30/87 **R114** *Network Magnetic Tape Usage*
Updated to represent current Center tape processing procedures, especially the TAPEI, MOVESTOR and MOVEUSER procedures.

01/26/87 **4376** *Network Electronic Mail Addresses*
This memo is a reference card for electronic mail addresses to and from the Computation Center's computers.

01/21/87 **4346** *Using AMDB to View and to Modify Project Records*
Extensively updated to accurately represent current policies and procedures.

01/21/87 **R138** *KERMIT User's Guide*
The 6th Edition, Revision 2, dated May 26, 1985 replaced the 6th Edition dated March 29, 1985.

12/11/86 **2015** *The SPSSX Batch System on the DEC-20*
Updated to accurately represent policies and procedures under SPSSX Release 2.1, which replaced Release 1.0 on the Center's DECsystem-20 this December, 1986.

12/04/86 **4348** *Project Administrator's Handbook*
Updated to accurately represent current Center policies and procedures.

12/04/86 **4347** *Setting Up a Project on the Computation Center's MVS System*
The extensive update now presents current policies and procedures.

11/05/86 **2008** *DEC-20 Tape Procedures*
This memo has been eliminated from Doclist. The information for-

merly found in this memo has been incorporated into the manual "Magnetic Tape Usage" (TAPEMAN, R114 in Doclist).

10/17/86 **R70** *Introduction to the DECSystem-20 At the University of Chicago*
Updated to reflect the elimination of DEC-20 Dale and to represent current policies and procedures on the DEC-20.

Recently Updated Documentation

01/29/87 **4168** Rates: Ext. Non-Academic

01/29/87 **4169** Rates: External Academic

01/29/87 **4170** Rates: Internal Academic

01/21/87 **6001** Kermit for the IBM PC

New in the MVS Notice File

02/24/87 **SCRP21** Script 86.1 available for testing

02/17/87 **FORT9** VS-FORTRAN Option for Executable Load Module

02/13/87 **GRAF1** Telagraf graphics available on Xerox 9700

02/02/87 **TEXX1** Printing T_EX files on Xerox 4050 laser printer

01/26/87 **STAT9** BMDP 87 is available

01/12/87 **SPSS25** SPSSX MVS to DEC Transport Bug

12/26/86 **MVS4** Ascii tape labels must meet XA standards

12/23/86 **PLI2** Changes to PL/1 - SyncSort interface

12/23/86 **MVS3** Held jobs no longer print at midnight

12/23/86 **MVS2** ACF2 now validates access to user PROCLIBs

12/17/86 **SWYL25** SHOW JOBS display is different under MVS/XA

12/17/86 **COB4** Cobol changes for MVS/XA

12/17/86 **PLI1** Changes to PL/I options for MVS/XA

11/24/86 **FORT8** Libraries not working with VS Fortran

New in the DEC-20 Notice File

02/24/87 **SCRP3** Script version 86.1 is available

02/02/87 **TEX4** Printing T_EX on Xerox 4050 printer

01/12/87 **SPSS17** SPSSX MVS to DEC Transport Bug

12/30/86 **SVC1** General Information Numbers

12/30/86 **SVC2** Computer Communications Information

12/30/86 **SVC3** Usite Information

12/30/86 **SVC4** Usite Output Delivery Schedule

12/30/86 **SVC5** Advice Desk Information

12/30/86 **SVC7** Business Office Information

12/30/86 **SVC8** Microcomputer Distribution Center Information

12/30/86 **SVC9** Terminal & Microcomputer Maintenance

12/30/86 **SVC10** Tape Library Information

12/30/86 **SVC11** Data Entry Information

12/30/86 **SVC12** Demonstration & Develop-

ment Lab Information

12/30/86 **SVC13** I/O Window Information

12/30/86 **SVC14** Expediting Services Information

12/30/86 **SVC15** Computation Center Custom Services

12/03/86 **SPSS15** SPSS X Release 2.1 known bugs

12/03/86 **SPSS16** SPSS X Release 2.1 available for testing

Index of Center Newsletters

The following index covers the last eight issues of the *Computation Center Newsletter*, from the February 1985 issue through Winter 1987. Within this period, the *Newsletter* changed from a monthly to a quarterly publication. As a result, "Feb'85" refers to February 1985, while all of the other abbreviations refer to seasons: "W" - Winter, "F" - Fall, "Su" - Summer, "Sp" - Spring.

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860 and the DEC-20, Chip.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization November 1986 - January 1987

Service Provided	Amdahl 5860/MVS November 1986	Amdahl 5860/MVS December 1986	Amdahl 5860/MVS January 1987
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	1:27	n.a.	1:52
non-setup jobs	0:52	n.a.	0:57
tape setup jobs	9:28	n.a.	13:18
Total CPU-hours used	168 hrs 48 min	149 hrs 24 min	203 hrs 48 min
SuperWylbur sessions	16,494	n.a.	16,981
CPU hours	6 hrs 25 min	n.a.	6 hrs 17 min
connect hours	12,184 hrs	n.a.	11,896 hrs
average session	45 min	n.a.	42 min
average CPU/session	1.40 sec	n.a.	1.33 sec
TSO sessions	3,285	n.a.	4,560
CPU hours	3 hrs 12 min	n.a.	5 hrs 11 min
connect hours	1,371 hrs	n.a.	1,815 hrs
average session	26 min	n.a.	24 min
average CPU/session	3.58 sec	n.a.	4.09 sec
Jobs submitted	47,031	48,941	52,264
Steps executed	93,479	98,102	107,801

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown).

The reported connect time does not include Model 204 or CICS.

n.a. means the data is currently not available, due to the conversion from MVS to MVS/XA.

Top Twenty MVS Programs November 1986 - January 1987

Program	Description	Percent	Count
UCFLBL20	Filebol	8.35	28,789
SASLPA	SAS	6.46	22,261
WYLLIST	SuperWylbur list offline	5.96	20,559
SORT	SyncSort	4.84	16,679
IEBGENER	IBM file handling utility	4.77	16,444
IDCAMS	VSAM utility for catalog operations	3.65	12,576
IEFBR14	IBM utility - null step	3.25	11,195
IEWL	Linkage editor	3.09	10,646
IBMDEC	IBM/DEC link utility	2.96	10,204
SUCCESS	Operating Services utility	2.73	9,420
FAIL	Operating Services utility	2.71	9,326
SPSSX	SPSS Version X	2.59	8,928
MARKYBOL	Systems utility	2.48	8,541
BATCH204	Model 204 run in batch	2.00	6,895
MAILXBM	Bitnet mail through SuperWylbur	1.54	5,312
IELOAA	PL/I compiler	1.43	4,914
MVGDG	Multi-volume tape GDG cycler	1.25	4,294
UOCVTOC	List volume table of contents	1.11	3,817
IEBCOPY	IBM utility for partitioned datasets	1.02	3,503
IKFCBLOO	VS Cobol version 2.4	0.97	3,338

CHIP - DECsystem-2060 Utilization November 1986 - January 1987

Account Period	November 1986		December 1986		January 1987	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	97.0	4874	90.1	4728	82.6	5375
EVENING	42.9	932	45.4	915	36.6	868
OVERNIGHT	95.3	1036	76.9	919	74.1	994
TOTAL	235.2	6842	212.4	6562	193.3	7237

Top Twenty Chip Programs November 1986 - January 1987

Program	Description	Percent	Count
OPR	Operator functions	8.79	22,889
MM	Electronic Mail Manager	8.05	20,963
PTYCON	Pseudo-terminal controller	4.90	12,760
SYSDPY	Operator interface with job queues	4.88	12,699
WATCH	Generates these statistics	4.84	12,597
RWHOD	Lists users on ethernet hosts	4.84	12,595
SYSJOB	System job controller	4.84	12,595
MMAILR	Network mail daemon	4.84	12,592
NETSRV	Supports ethernet network functions	4.84	12,592
IBMSPL	MVS link daemon	4.83	12,582
WINDOW	Full screen PTYCON	4.82	12,543
USAGE	Utility to collect program use data	4.77	12,423
BITNET	Off-campus electronic mail network	4.76	12,399
EXEC	TOPS-20 command processor	4.59	11,957
MUSE	Full screen editor	3.98	10,352
1022	Database system	3.34	8,689
DEMAND	Data management system	2.41	6,271
EMACS	Full screen editor	2.25	5,867
BATCON	Batch Controller	2.14	5,585
MINITA	Interactive statistical program	1.83	4,774

General Information

Computation Center Administration

Acting Director of the Computation Center   John E. Iannantuoni   702-7616

Associate Director
Operations and Technical Services   John E. Iannantuoni   702-7616

Assistant Directors
Instruction and Research Information Services   Harold C. Bloom   702-7155
Information Technologies and New Services   George R. Bateman   702-7174
Finance and Administration   Peter B. Hayward   702-8671
Administrative Information Services   David E. Trevvett   702-6018

Computation Center Buildings

Main Building   1155 E. 60th St.   702-7151
Microcomputer Distribution Center   1307 E. 60th St., Rear Entrance   702-6086
Multi-media Classroom   Harper 406   702-7153
Usite Terminal Cluster   Wieboldt 310   702-7894

Computer Communications Information

Phones	**300 baud**	**1200 baud**	**2400 baud**	**4800 baud**	**9600 baud**
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	**300 baud**	**1200 baud**	**2400 baud**	**4800 baud**	**9600 baud**	**telenet**
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	mvs24/vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20	chip	chip	chip	chip	chip	chiptn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	General address form	Example
Amdahl 5860 (MVS)	logonid@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username@chip.uchicago	staff.hal@chip.uchicago
Pyramid 90x (Sphinx)	person-id@sphinx.uchicago	halb@sphinx.uchicago

Telenet dial-in information

	Nearest phone number	Network address
	800-336-0437 most states	312436 (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)
		312437 (2400 baud - DEC only)

Quick Reference Phone Directory

On January 1, 1987, all **962** exchanges became **702**.

Information
General 702-7151
Machine status 702-7626

Accounts
Billing information & records 702-7158
Opening class accounts 702-7159
Opening PCA and regular accounts . . . 702-7158
Refunds 702-7624

Advice and help
Applications software 702-7624
    Reporting problems
    Suggestions & complaints
Office support systems 702-7174
    Microcomputers
    Terminals
    Word processors

Computer supplies & tapes 702-7159

Custom services
Microcomputer custom services 702-7453
Printing 702-6081
Programming 702-7166

Data entry services 702-7604

Dataset recovery
PCA accounts 702-7159
Other accounts 702-7621

Documentation 702-7452

Magnetic tape services 702-7614

Microcomputers
Appointments for demonstrations 702-7178
Consultation on equipment 702-7174
Custom technical services 702-7453
Purchase of microcomputers 702-6086
Purchase micro service contracts 702-6086

New software requests 702-7166

Production jobs & special handling . . 702-7602

Purchases
Computer supplies & tapes 702-7159
Microcomputers 702-6086
Microcomputer service contracts 702-6086
Used equipment 702-7615

Repairs
Macintosh microcomputers 702-7663
Terminals 702-7663

Subscriptions to the Newsletter 702-7159

**Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637**

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
_____

City
_____

State   Zip
_____

The University of Chicago
Computation Center
NEWSLETTER

Table of Contents

GENERAL NEWS

Computation Center Holiday Schedules

The facilities and services of the Computation Center will be on the following schedules for the Independence Day and Labor Day holidays:

July 3 (University Holiday):

Computers	Available
I/O Window	Open
Usite cluster	Open
Output delivery	Weekend schedule
Advice desk	Closed
Regenstein cluster	Closed
Crerar cluster	Closed except for those eligible for 24-hour access
Staff offices	Closed

July 4 and Labor Day (September 7):

Computers	Down
I/O Window	Closed
Usite cluster	Closed
Usite output delivery	None
Advice desk	Closed
Regenstein cluster	Closed
Crerar cluster	Closed except for those eligible for 24-hour access
Staff offices	Closed

Ordinarily, the computers are available on July 4th.

However, this year they will be unavailable because the Uninterruptable Power Supply will be installed on that day.

Academic Year End: Extend Accounts, Plan Summer Data Storage

The Year-end Policy

Many accounts expire at the end of the academic year, June 30, 1987. Owners of these accounts may arrange to extend the account termination date by contacting the Business Office at 702-7158. The account extension will guarantee uninterrupted service — otherwise you may find that the account has been locked and its files have been transferred to tape. The year-end policy is as follows:

PCA accounts belonging to students who are not currently registered for classes (including the summer quarter), or PCA accounts which have expired or are out of funds, receive special handling. All DEC and MVS datasets for these accounts are transferred to tape and removed from disk by the Center. There is no charge to the user for moving the data from disk to tape. There is, however, a minimum charge of $15.00 for having any or all of the datasets restored to disk by Operating Services personnel. That $15.00 cannot be charged to a PCA account.

Non-PCA accounts on the Amdahl or on DECsystem-20 Chip are handled differently. Tapes and disk files charged to an expired account continue to accrue charges. *It is the user's responsibility to delete disk datasets and to return unneeded tapes.* This policy prevents the possible loss of important data.

Both PCA and non-PCA files on the Pyramid are handled as follows. Pyramid directories are first

moved to a holding directory for two weeks, then are transferred to tape. Pyramid users may submit their own restoration requests by using the *arcrest* command; the *arclist* command can be used to list files in the archives.

Disk storage charges for files belonging to the new Instructional Computing Accounts (those accounts beginning with the letters "QH") will continue to accumulate until the student scratches the files. *Because the account remains active as long as the student is a part of the University, any student using a "QH" account is responsible for all the files created under the account.*

Plan your summer computing needs now so that you don't return in the Fall to unexpected storage charges or a locked account.

Tape May Save You Money on Summer Data Storage

Many of you who are leaving for the summer will be wondering whether to store your data on tape. If your disk storage charges are more than $8.00 a month ($24 for July through September), you save money by transferring the data to tape, since tape purchase or rental will cost approximately $20 to $25.

The decision whether the money saved is worth the trouble of putting the data on tape is left to the individual user. To estimate disk storage costs, you should know the following:

On the Amdahl, 3350 disk storage of about 29 tracks (19254 characters/track), for three months at 1 cent per track/day will cost about $26.

Similarly, 3380 disk storage of about 13 tracks (47476 characters/track), for three months at 2.25 cents per track/day will cost about $26.

To find out how many tracks you use, do one of three things: 1) Check the VTOC listing at the advice desk at Usite, 2) Run USERVTOC, documented in Memo 4075, or 3) Use the Super-Wylbur macro *PUB FINDSN* and request the *full* option. This last option will include the number of tracks used by the datasets, but can result in quite a large listing of information.

On the DEC or the Pyramid, the unit of storage is the page. To find the number of pages you are currently using on the DEC, use the *INFORMA-TION DISK* command on each structure where you are storing data. The *VDIR* command can be used to find the number of pages used by each file, but, again, can produce quite a lengthy listing.

About 96 DEC pages can be stored for the summer for $26. The Pyramid "page" costs less than the DEC page — about 192 pages can be stored for the summer for that same amount. However, note that there are differences in the definition of page between the DEC and the Pyramid. There are 2048 bytes per Pyramid page, while there are 512 words per DEC page.

The command *du -s* given from the home directory on the Pyramid will list the number of pages in use by that directory plus all directories below it. Or you can issue the *ls -lga* command to learn the number of bytes you have in use.

In general, the following programs are recommended for copying datasets from disk to tape:

> For the Amdahl, MOVESTOR for non-SAS datasets
> (Use SAS PROC COPY for SAS datasets)
> For the DEC, DUMPER
> For the Pyramid, TAR.

If you decide to buy or rent a tape, see *Magnetic Tape Usage* (R114, TAPEMAN in Doclist) for more complete information.

A video tape describing the use of magnetic tapes is also available. Contact the cluster assistant at Usite if you wish to view it.

Programs that are recommended to restore files to the same Center computers are:

> For the Amdahl, MOVEBACK for non-SAS datasets
> (Use SAS PROC COPY for SAS datasets.)
> For the DEC, DUMPER
> For the Pyramid, TAR.

Checklist for Transporting Data

— Yvonne Behn

If you are planning to put data on a computer tape so that you can take it to another computer installation, there are a few things you should check first. Determine what tape characteristics are necessary for compatibility with the new system so that use of the tape in its new environment will go smoothly. A written description of the tape, including the format of the datasets on it, should always accompany the tape reel. Here are a few variables to check before preparing the tape:

1. Are the tape drives 9-track or 7-track?
2. What densities may be used?
3. Should the parity be even or odd?
4. If data is alphanumeric, what coding conventions are used?
   - a. EBCDIC (IBM, Amdahl machines)
   - b. ASCII (most other machines)
   - c. BCD
   - d. Column Binary Coded Data

5. What is the label format preferred or required?
   - a. IBM Standard Labels (IBM or Amdahl machines - we cannot create DOS labels)
   - b. ANSI Standard Labels
   - c. Non-labeled
   - d. Other
6. What is the maximum acceptable blocksize? (Many computers cannot handle BLKSIZE > 2000)
7. Should the record format be fixed length (most common), variable length, or "stream format?"

Explanations and instructions for formatting tapes are found in the manual "Magnetic Tape Usage," available through Doclist as TAPEMAN and in the racks at the terminal clusters (R114).

If exact details on how a tape should be formatted cannot be determined, it is safest to prepare an unlabeled (NL) ASCII tape at 1600 bpi, having fixed length records of length 80 (if possible), and blocksize of about 800.

It is not a good idea to send files in SuperWylbur EDIT format anywhere, since not many other installations have this version of SuperWylbur. It is also quite possible that even another institution having SuperWylbur may define the blocksize differently. Resave SuperWylbur files with the CARD or LRECL=nn parameter before putting them on tape.

The following graphic illustrates the differences between the 9700 and 9790 print systems:

9700

Standard IOT

ESS
PDP 11/34 (6MHz) 96K Control Memory 32K Forms Memory - 128K Forms Memory Opt. 1Mb Font Memory - 8-16 Mb Font Memory Opt. Cache Memory Option 850/860 Interface Optn. 50MB Removable Disk

75 ips Tape Drive Single or Dual Density Autoload/cartridge load

Lear Siegler ADM 3 User Interface

V10/V10CR

9790

Standard IOT

ESS
J11 (15MHz) 512k Control Memory 128k Forms Memory 8Mb Font Memory 8Mb Option 4K Cache Memory 850/860 Interface 100MB Fixed Disk 2 (50MB) Disk Exp Kits

100 ips Tape Drive Autoload/Dual Density Additional Tape Buffering

Xerox 6065 PC Based User Interface

V1

(ESS = Electronic Sub System - V10/V10CR, V1 = different levels of operating system software)

Xerox 9700 Printer Upgrades

— *Charles Hodge*

Over the next two months, the Computation Center will upgrade its Xerox 9700 laser printers to the newer 9790 models. The Xerox 9790 with its Mod V engine represents the most efficient high-end laser printer compatible with the Center's mainframes and applications. This upgrade will improve high-speed laser printing by providing higher quality output, expanded memory for fonts, forms, and graphics, and faster CPU and I/O processing.

As shown in the graphic at the top of this page, the major changes occur in the Electronic Sub System (ESS). The CPU change from a PDP11/34 to a J11 and the increase in control memory from 96K to 128K reduce the time needed to translate code into page images. Font memory increases from 1Mb to 8Mb and forms memory grows from 32K to 128K. These memory expansions allow users to produce more complex documents with a greater variety of fonts, forms, and graphics.

The Mod V engine incorporates an improved laser and fuser technology along with an enhanced image-to-paper transfer process. This results in better looking documents and more consistent print quality than can be produced by the current 9700s. In particular, improvements will be noticed in the following areas:

- *Superior Font Definition*
  (Improved clarity in small and serif fonts).
- *Improved Half-Tone Detail*
  (Greater depth perception in graphics).

- *Enhanced Solid Area Density*
  (Deeper blacks).
- *Better Edge Acuity*
  (Sharper characters).

The Mod V mechanism can accept a wider range of paper types and weights. In addition, while the current 9700 printers produce a glossy finish from a hard fusing technology, the Mod V produces a flat or matted finish from a soft fusing technology. As a result of the soft fusing process, quality printing can be produced on soft surface or textured papers such as correspondence quality bond or laid-finish paper.

In summary, the Xerox 9790 using the Mod V engine produces pages of greater quality than those produced on our present Xerox 9700s and is able to extend that quality to a wider variety of paper. These capabilities are necessary for the expanded development of EPIC, XICS/Xset, T$_E$X, Script, HFDL, and other mainframe printing and publishing applications.

Quality Assurance

The installation of upgraded hardware is only one of several actions taken to improve the quality of printed output. Other actions include expanded operator training and the development of quality control tests.

The Center has entered into an agreement with Xerox for advanced operator training on the Xerox 9790—Mod V hardware. The goal of this training is to have operators on all shifts qualified to maintain the quality of the printing system. This will keep output quality at levels that are higher than today's, and will increase the time that the printers are available to users.

A quality-sample packet and a redesigned output header page have been developed with the help and approval of Xerox. Together, they represent the best tests available to identify variations in the quality of printed output.

In addition, the consistency of chemicals and the quality of paper are being examined in order to ensure consistently high quality printing.

New XICS/Xset Procedures

Thanks to the installation of the 9790—Mod V expanded font memory, new and expanded printing procedures can now be made available to the public. Style specifications to print a multiple imposition booklet and a multiple column mailer/brochure are among the first of several page layouts to be made available in public disk libraries.

A brief description and samples of the pages produced follow.

Imposition Printing: In traditional printing, the placing of multiple logical pages on one physical page is known as imposition. The XICS/Xset formatter has the capability of processing text and formatting two logical pages for each printed (physical) page such that the logical pages appear in sequential order when the output is folded along a centerline to produce a booklet.

Several orientations may be used with multiple imposition printing. The XICS/Xset formatter can set text in either a landscape or a portrait physical page orientation. The logical pages may then appear either head-to-head or head-to-toe. In landscape orientation with pages set head-to-toe a booklet page is made by folding the physical page along the long axis (i.e., logical pages are one above the other). A fold along the short axis makes a booklet page for physical pages set in the portrait orientation.

An example of landscape pages set in imposition head-to-head is included at the end of this article. The booklet page would be made by folding the page along the short axis.

Multiple Font Orientations: The XICS/Xset formatter has the capability of setting text in four orientations on the physical page — portrait, landscape, inverse portrait, and inverse landscape. This feature has always been present in XICS/Xset, but the limited amount of font memory available on our 9700s made its full use impractical. With the 9790—Mod V printers, applications requiring fonts in various orientations as well as larger sizes can now be developed.

Proportional font families, such as Helvetica 300 (no serifs) and Times 300 (with serifs), are available to XICS/Xset in sizes of 6, 7, 8, 9, 10, 11, 12, 14, 18, and 24 points, in medium and bold weight, and in roman and italic stress. In addition, each size, weight, and stress exists in all four orientations. Applications like the mailer/brochure require

fonts in both their regular and inverse orientations. The example of the mailer/brochure at the end of this article uses three of the four orientations.

Note that since this *Newsletter* was printed on a Xerox 9700, the examples will not show the improved quality of the Xerox 9790s.

SENIOR RECITAL

JASON D. WEIL, COMPOSER

A Noiseless Patient Spider — Walt Whitman

A noiseless patient spider,
I mark'd where on a little promontory it stood isolated,
Mark'd how to explore the vacant vast surrounding,
It launch'd forth filament, filament, filament, out of itself,
Ever unreeling them, ever tirelessly speeding them.

And you O my soul where you stand,
Surrounded, detached, in measureless oceans of space,
Ceaselessly musing, venturing, throwing, seeking the spheres to connect them,

Till the bridge you will need be form'd, till the ductile anchor hold,
Till the gossamer thread you fling catch somewhere, O my soul.

Hap — Thomas Hardy

If but some vengeful god would call to me
From up the sky, and laugh: "Thou suffering thing,
Know that thy sorrow is my ecstasy,
That thy love's loss is my hate's profiting!"

Then would I bear it, clench myself, and die,
Steeled by the sense of ire unmerited;
Half-eased in that a Powerfuller than I
Had willed and meted me the tears I shed.

But not so. How arrives it joy lies slain,
And why unblooms the best hope ever sown?
—Crass Casualty obstructs the sun and rain,
And dicing Time for gladness casts a moan....
These purblind Doomsters had as readily strown
Blisses about my pilgrimage as pain.

3

-Program-

C Minor Fugue (1985)

Tape

Using the subject of J. S. Bach's C Minor Fugue from the Well Tempered Clavier, Book I, this piece explores imitative counterpoint from a timbral perspective. The subject is used in each voice. The bass is a cantus firmus, singing the subject one time. Each higher voice uses successively faster repetitions of the subject. The counterpoint is based on the interaction and relative prominence of each voice's timbre.

A Noiseless Patient Spider (1986)

Trevor Mitchell, tenor
Robert Bergman, piano

Walt Whitman's poem draws a parallel between a small spider that literally casts its net to the winds and the search by the human soul for a firm foundation in a universe of constant flux. The ideas and mood of the poem are expressed in the song through shifting meter, word painting and lack of final cadence.

Hap (1986)

Trevor Mitchell, tenor
Robert Bergman, piano

This complex and bitter poem by Thomas Hardy has two voices and three moods. The narrator is by turns both frustrated and angry, and resigned to the meaningless suffering humanity must endure. The "vengeful god" he imagines as the source of his agony is proud, uncaring and unmerciful. This concentrated range of emotion is underscored in the different character of each section of the song.

1

Pas de Deux (1985)

Lynn M. Juried, flute
Laura Frockenburgh, cello

This piece was conceived as a highly contrapuntal duet. The two instruments have equal status and interact intimately, just as two dancers must.

-Intermission-

Creature of Habit, Creature of Change (1986)

Jason D. Weil, Mirage sampling synthesizer
Tape

On a quiet summer day a man plays catch with words. All taped sounds were generated by synthesizer.

Wish It Were True (1984)

The Deja Vu Big Band, Les Stahl director

This piece differs from a typical jazz band arrangement in two ways. First, the whole piece derives from only one motiv. There is also no piano or guitar, so the harmonic foundation relies solely on the horns.

Lynn Marie (1986)

The Deja Vu Big Band

A jubilant and lighter nature help make this work much jazzier. It follows a more traditional form for jazz band. It is dedicated to my fiancée.

2

This recital is given in partial fulfillment of the requirements for the degree,
Bachelor of Music in Composition.

The Computation Center

of

The University of Chicago

PRESENTS

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1155 East 60th Street
Chicago, Illinois 60637

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- Prints signatures and logos

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High Quality

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XICS, the Computation Centers' Integrated Composition System is the State of the art in computer assisted printing

XICS is a composition prooling syste that allows you to set up various type of documents, from computer letters insurance policies or multi-page reports and manuals.

- **XSET** a user friendly interface to **XICS** is available to all users

- Many font styles and point sizes

- Special fonts can be made to order.

- Letter heads, signatures and logs can be inserted

- Custom forms design

- Custom printing of on-demand documents, (newsletters, monographs, brochures)

- Formatted reports (special paper, illustrations)

UPS System Installation

— Mike Willey

The Computation Center will install an Uninterruptible Power Supply (UPS) system this July 4th. The UPS system will provide battery backup electrical power for a period of fifteen minutes should there be a power outage. If an outage lasts longer than five minutes, the UPS system will allow the Center to power systems down in an orderly fashion. Just as important, the UPS system will eliminate problems associated with the frequent momentary power losses and voltage spikes. Such power problems often cause components to power down and can corrupt data stored on disk. They can also damage or weaken components, producing hardware instability for several days.

The UPS system will not protect our customers from all power disruptions. Power problems can affect the entire campus or be isolated to a few buildings. In such cases, our UPS system will not protect terminals, PC's, and other customer equipment from disturbance.

The UPS system will, however, improve the stability of our computer systems and protect the integrity of our disk files. The Center has experienced several power outages since moving to the 1155 building. These outages have ranged from a "flicker of lights" to a period of two and a half hours without electrical power. An electrical disruption lasting only a few microseconds can lead to several hours of work rebuilding disk files. The UPS system will eliminate this type of service disruption and loss of productivity.

Data Entry Rate Adjustment

Effective July 1, 1987, Data Entry rates will be shifted from billing by the hour to billing by the keystroke. Since the data entry system keeps track of work by the keystroke, your charges for a given piece of work will be reproducible down to the keystroke level.

These changes, in general, will result in increased charges for Data Entry services which will offset the increasing cost of labor and administration in providing these services. In any individual case, the increase may vary between 0 and 40% depending on the exact nature of the work. Data Entry rates have not been increased since June, 1985.

In all cases, the new charges will be reproducible and predictable. Neither is the case when hourly rates are used.

The new rates will be as follows:

> *$0.003 per keystroke* for normal entry or verification

> *$0.005 per keystroke* for rush entry or verification or for exceptionally difficult data

The Center will work with you to determine the best low cost alternative for your work.

EDUCOM & ADAPSO Statement on Software and Intellectual Rights

The following text has been extracted from a broch-ure produced as a service to the academic com-munity by EDUCOM, a non-profit consortium of over 450 colleges and universities concerned with the use and management of information technology in higher education, and by ADAPSO, a computer software and services industry association. This text includes a statement on the ethics of software use, questions and answers on the subject, and a set of alternatives to unauthorized copying of soft-ware.

We hope that the presentation of this material will encourage the members of the University comput-ing community to consider the ethical and legal implications of unauthorized software use. In turn, we hope that this might lead to the development of a uniform University policy dealing with this issue.

For copies of the brochure, contact:

> EDUCOM
> Software Initiative
> P.O. Box 364
> Princeton, NJ 08540
>
> ADAPSO
> 1300 North 17th Street
> Suite 300
> Arlington, VA 22209

Although the brochure is copyrighted, EDUCOM and ADAPSO authorize and encourage making and distributing copies of it, in whole or in part, providing the source is acknowledged.

The entire text of the brochure follows.

USING SOFTWARE

A GUIDE TO THE ETHICAL AND LEGAL USE OF SOFTWARE FOR MEMBERS OF THE ACADEMIC COMMUNITY

Software enables us to accomplish many different tasks with computers. Unfortunately, in order to get their work done quickly and conveniently, some people justify making and using unauthorized copies of software. They may not understand the implications of their actions or the restrictions of the U.S. copyright law.

Here are some relevant facts:

I.   Unauthorized copying of software is il-legal. Copyright law protects software authors and publishers, just as patent law protects inventors.

II.   Unauthorized copying of software by in-dividuals can harm the entire academic community. If unauthorized copying pro-liferates on a campus, the institution may incur a legal liability. Also, the in-stitution may find it more difficult to negotiate agreements that would make software more widely and less expen-sively available to members of the aca-demic community.

III.   Unauthorized copying of software can deprive developers of a fair return for their work, increase prices, reduce the level of future support and enhance-ment, and inhibit the development of new software products.

Respect for the intellectual work and property of others has traditionally been essential to the mis-sion of colleges and universities. As members of the academic community, we value the free ex-change of ideas. Just as we do not tolerate plagia-rism, we do not condone the unauthorized copying of software, including programs, applications, data bases and code.

Therefore, we offer the following statement of principle about intellectual property and the legal and ethical use of software. This "code"—intended for adaptation and use by individual colleges and universities—was developed by the EDUCOM Software Initiative.

Software and Intellectual Rights

Respect for intellectual labor and creativity is vital to academic discourse and enterprise. This principle applies to works of all authors and publishers in all media. It encompasses respect for the right to acknowledgment, right to privacy, and right to determine the form, manner, and terms of publication and distribution.

Because electronic information is volatile and easily reproduced, respect for the work and personal expression of others is especially critical in computer environments. Violations of authorial integrity, including plagiarism, invasion of privacy, unauthorized access, and trade secret and copyright violations, may be grounds for sanctions against members of the academic community.

Questions You May Have About Using Software

a. *What do I need to know about software and the U.S. Copyright Act?*
Unless it has been placed in the public domain, software is protected by copyright law. The owner of a copyright holds exclusive right to the reproduction and distribution of his or her work. Therefore, it is illegal to duplicate or distribute software or its documentation without the permission of the copyright owner. If you have purchased your copy, however, you may make a back-up for your own use in case the original is destroyed or fails to work.

b. *Can I loan software I have purchased myself?*
If your software came with a clearly visible license agreement, or if you signed a registration card, READ THE LICENSE CAREFULLY before you use the software. Some licenses may restrict use to a specific computer. Copyright law does not permit you to run your software on two or more computers simultaneously unless the license agreement specifically allows it. It may, however, be legal to loan your software to a friend temporarily as long as you do not keep a copy.

c. *If software is not copy-protected, do I have the right to copy it?*
Lack of copy-protection does NOT constitute permission to copy software in order to share or sell it.
"Non-copy-protected" software enables you to protect your investment by making a back-up copy. In offering non-copy-protected software to you, the developer or publisher has demonstrated significant trust in your integrity.

d. *May I copy software that is available through facilities on my campus, so that I can use it more conveniently in my own room?*
Software acquired by colleges and universities is usually licensed. The licenses restrict how and where the software may be legally used by members of the community. This applies to software installed on hard disks in microcomputer clusters, software distributed on disks by a campus lending library, and software available on a campus mainframe or network. Some institutional licenses permit copying for certain purposes. Consult your campus authorities if you are unsure about the use of a particular software product.

_e._ _Isn't it legally "fair use" to copy soft-
ware if the purpose in sharing it is
purely educational?_
No. It is illegal for a faculty member or
student to copy software for distribution
among the members of a class, without
permission of the author or publisher.

Alternatives to Explore

Software can be expensive. You may think that you
cannot afford to purchase certain programs that
you need. But there are legal alternatives to un-
authorized copying.

Site Licensed and Bulk-Purchased Software

Your institution may have negotiated agreements
that make software available either to use or to
purchase at special prices. Consult your campus
computing office for information. Software available
through institutional site licenses or bulk purchases
is subject to copyright and license restrictions, and
you may not make or distribute copies without
authorization.

Shareware

Shareware, or "user-supported" software, is
copyrighted software that the developer encourages
you to copy and distribute to others. This permis-
sion is explicitly stated in the documentation or
displayed on the computer screen. The developer
of shareware generally asks for a small donation or
registration fee if you like the software and plan to
use it. By registering, you may receive further doc-
umentation, updates and enhancements. You are
also supporting future software development.

Public Domain Software

Sometimes authors dedicate their software to the
public domain, which means that the software is
not subject to any copyright restrictions. It can be
copied and shared freely.

Software without copyright notice is often, but not
necessarily, in the public domain. Before you copy
or distribute software that is not explicitly in the

public domain, check with your campus computing
office.

A Final Note

Restrictions on the use of software are far from
uniform. You should check carefully each piece of
software and the accompanying documentation
yourself. In general, you do not have the right to:

1. _receive and use unauthorized copies of
    software, or_

2. _make unauthorized copies of software
    for others._

If you have questions not answered by this broch-
ure about the proper use and distribution of a
software product, seek help from your computing
office, from the software developer, or publisher.

MVS

Conversion to IBM 3380 Disks Continues

— Ernie Froemel

Articles in the Spring 1987 *Newsletter* discussed the features of the IBM 3380 disk packs. Those articles also discussed the plan for conversion to those disk packs and the implications for the user. This article will let you know what has been happening with that conversion process.

In general, we are on schedule and still expect to complete the change-over by the end of summer. To help you distinguish between 3350 and 3380 disks, we are using different names for 3380 disks. 3380 disk packs named STORxx are available for storage of permanent files. These correspond to the 3350s named PUBxxx. Scratch files may be saved for the duration of a job on 3380s called WORKxx. The latter are the equivalent of the TEMPxx disks.

We are aware that some datasets copied to tape from 3350s may not be recoverable to 3380s. In particular, SAS data libraries previously copied to tape using IEHMOVE or FDR cannot be restored to 3380s. The Center is examining possible solutions to this problem, and will keep you informed about our progress in this area.

Illegal Dataset Names. The MVS operating system requires that dataset names follow these rules:

1. Only alphabetic, numeric, or national characters and the hyphen are legal. The national characters are @ # $.
2. The maximum length is 44 characters, separated into levels by dots. The dots count as characters.
3. Each level begins with an alphabetic or national character and consists of from one to eight legal characters.

So, as a prelude to moving datasets, those with illegal names had to be renamed. That process was done on May 11, 1987. SuperWylbur mail was sent to all logon-ids which showed illegally named datasets. Users with a large number of such datasets were contacted by telephone, where possible.

Dataset names were changed from the form:

prefix.illegal-name

to the form:

prefix.ILGseq;

where *seq* is a four-digit number, and *prefix* is either a logon-id or a project-id.

A SuperWylbur macro is available to identify the new name for any dataset whose name was changed. To call that macro, logon to SuperWylbur and enter:

pub names

You will be prompted for the *prefix* and a list of old and new names will be displayed at your terminal. You may also request that the list be saved into a permanent file.

Duplicate Dataset Names. Since a 3380 disk can hold more data than a 3350, datasets from more than one PUBxxx disk will be moved to a single 3380. Two datasets on two different PUBxxx disks may have the same name; however, they cannot have the same name if they are moved to the same 3380 disk.

Before moving datasets to the 3380s, all duplicate dataset names will be identified and rewritten by suffixing the disk name and date to the original name. For example, if datasets named BIGUSER.MYDATA exist on both PUB001 and PUB002, they will be renamed as:

BIGUSER.MYDATA.PUB001.D*date*
and
BIGUSER.MYDATA.PUB002.D*date*

where date is a six-digit number.

All datasets moved to 3380 disks will be catalogued, so BIGUSER may logon to SuperWylbur and locate these newly named datasets with the command:

show dsns like mydata on cat

Rates. The rates for disk storage have been set to account for the larger track size on 3380s. A comparison between 3350 and 3380 rates in units of dollars per track per day for different classes of user is shown below:

User Class	3350	3380
Internal academic	.0100	.0225
External academic	.0150	.0337
External non-academic	.0175	.0394

Although a 3380 track is roughly 2.5 times larger than a 3350 track, a one-track dataset on a 3350 still needs one track on a 3380. Therefore, you may be able to reduce costs by collecting several one-track datasets into a partitioned dataset (PDS). See Memo 4298 for further information about PDSs.

For users who lease entire disk packs, the monthly rate comparison is as follows:

User Class	3350	3380
Internal academic	$1850	$4000
External academic	$2750	$6000
External non-academic	$3250	$7000

Daily rates for leasing full disk packs are as follows:

User Class	3350	3380
Internal academic	$ 61.67	$133.33
External academic	$ 91.67	$200.00
External non-academic	$108.33	$233.33

Wait and "C" on MVS— A Compiler is Coming

— Don Goldhamer

In response to the growing popularity of the C programming language, the Computation Center is in the process of evaluating three different "C" compilers which will run on the MVS operating system. At the conclusion of this evaluation, one of the compilers will be licensed for general use at the University.

The compilers which are being examined are:

> *the Lattice C compiler* (now owned by SAS, Inc.),

> *the Whitesmith compiler*, which is being distributed by IBM, and

> *the Waterloo C compiler* from Watcom, Inc.

Suggestions or questions should be directed to Don Goldhamer, Manager of Applications Systems, at 702-7166.

Problems Collecting T_EX via VTAM

— Ernie Froemel

There is currently an incompatibility when collecting T_EX lines via VTAM, in Full Screen SuperWylbur.

The backslash is the tab character in Full Screen SuperWylbur. Therefore, it is not interpreted as a backslash when it is collected.

Changing the tab character with a SET TABCHAR command does not solve the problem. Although it then appears that the backslash is being collected, it is not being properly translated.

Since the backslash is the default command character in T_EX, this results in unknown characters and uninterpreted commands when TEXTOX is run.

This problem does not exist in standard line-by-line SuperWylbur.

Until a permanent solution is developed, there are three ways to avoid the problem:

1. Use line-by-line SuperWylbur to collect T_EX files.
2. Change the control character within T_EX.
3. Collect as usual in Full Screen Super-Wylbur, but:

     — change the tab to another character, like ' # ', by entering: *set tabchar ' # '*

     — use the following change command before saving the file:

     change hex 4A to hex E0 in all nolist

VS-Fortran to Stand Alone

— Don Goldhamer

Somewhat over one year ago the Computation Center announced the availability of the VS-Fortran compiler. As reported in the Spring of 1986, IBM Corporation no longer supports the Fortran-G1, Fortran-H or Fortran-X(H-extended) compilers. Their functions have been taken over by the VS-Fortran compiler.

The VS-Fortran compiler is intended to compile Fortran-77 (ANSI X3.9-1978) language source code. It is compatible with Fortran-IV (X3.9-1966) language source code through the use of the optional *LANGLVL(66)* parameter that may be passed to the compiler on the *EXEC* statement.

All of the Computation Center supported mathematical subroutine libraries and utility subroutine libraries are now available in VS-Fortran compatible versions, and all future versions will be compiled under VS-Fortran (and from Fortran-77 source code where available).

All Fortran users are urged to complete the conversion or testing of their Fortran programs and systems in the next month. This process has been accomplished by most users during the past year.

On July 1, the Fortran-G, -H and -X compilers will be removed from public access. On September 1, they will be removed from the MVS system.

Any questions or suggestions should be directed to Don Goldhamer, Manager of Applications Systems, at 702-7166.

Sorting Large Datasets Via Tapes

— *Jim Lichtenstein*

Sorting Large Datasets:

MAXSORT, a new procedure for sorting very large datasets using tapes as sort work areas, has been installed. To use it the following JCL is necessary:

```
//MAXSORT   JOB  logonid,name,
//      other-job-card-parameters
/*
/*SETUP 'THIS JOB WILL ASK FOR AN UNKNOWN'
/*SETUP 'NUMBER OF SCRATCH TAPES.'
/*SETUP 'PLEASE RETURN ANY SCRATCH TAPES'
/*SETUP 'TO THE POOL WHEN THE JOB IS DONE.'
/*
//SRTSTEP EXEC MAXSORT,
//      BRKPT = 'logonid.BKPT.DATA'
//SORT.SORTIN DD define sort-input dataset
//SORT.SORTOUT DD define sort-output dataset
//SORT.SYSIN DD *
      (sort control cards)
/*
//
```

While the sort is executing, breakpoint information is written to the BPKPT dataset at logical points where the sort may be restarted. If the sort fails due to time-out or region problems, it may be restarted by running the very same job with the RESTART parameter added to the EXEC statement, as follows:

```
//SRTSTEP EXEC MAXSORT,
//   BRKPT = 'logonid.BKPT.DATA',RESTART = 1
```

The optional parameter

CYL = number-of-cylinders

may be put on the EXEC card to override the default scratch space on disk available to the job (the default is 50 cylinders), as in:

```
//SRTSTEP EXEC MAXSORT,CYL = 100
```

The amount of disk space to some degree determines how many scratch tapes will be used, but there is no simple way to determine what the balance is. The default will ensure, in most cases, that your job will run without running out of scratch disk space and that the SORT will succeed.

Running MAXSORT from other programs

If you are using programs such as SAS or SPSSX to sort large amounts of data, and you wish to use MAXSORT, you must code the MAXSORT JCL for yourself. Here is an example of MAXSORT JCL written for a SAS job:

```
//SORT   JOB logonid,name,REGION = 2048K,
//   other-job-card-parameters
/*
/*SETUP 'THIS JOB WILL ASK FOR AN UNKNOWN'
/*SETUP 'NUMBER OF SCRATCH TAPES.'
/*SETUP 'PLEASE RETURN ANY SCRATCH TAPES'
/*SETUP 'TO THE POOL WHEN THE JOB IS DONE.'
/* Allocation step required if not restarting
//ALLOC EXEC PGM = IEFBR14
//SORTBKPT DD UNIT = SYSDA,VOL = SER = WORK02,
//      SPACE = (1000,(100,20)),
//      DISP = (,KEEP),DSN = logonid.BKPT.DATA
/*
//SASSTEP EXEC SAS,OPTIONS = NODYNALLOC
/*
//$ORTPARM DD DSN = SYS2.PROCUT(MAXSORT),
//      DISP = SHR
//SORTBKPT DD UNIT = SYSDA,VOL = SER = WORK02,
//      DISP = OLD,DSN = logonid.BKPT.DATA
/*
//SORTWK01 DD UNIT = SYSCR,
//      SPACE = (CYL,(20,1)),DISP = NEW
//SORTWK02 DD UNIT = SYSCR,
//      SPACE = (CYL,(20,1)),DISP = NEW
//SORTWK03 DD UNIT = SYSCR,
//      SPACE = (CYL,(20,1)),DISP = NEW
/*
//SORTOU00 DD UNIT = (TAPE9,,DEFER),
//      DISP = (,KEEP),DSN = logonid.U00
//SORTOU01 DD UNIT = (TAPE9,,DEFER),
//      DISP = (,KEEP),DSN = logonid.U01
```

```
//SORTOU02 DD UNIT = (TAPE9,,DEFER),
//     DISP = (,KEEP),DSN = logonid.U02
//SORTOU03 DD UNIT = (TAPE9,,DEFER),
//     DISP = (,KEEP),DSN = logonid.U03
/*
//IN    DD define-sort-input-data-library
//OUT   DD define-sort-output-data-library
/*
//SYSIN  DD *
  PROC SORT DATA = IN.input-sas-data-set
     OUT = OUT.output-sas-data-set;
     BY sort-keys;
/*
//
```

The first step of this job, called ALLOC, creates a dataset used to store information needed to restart the job in case it fails. To restart a job, remove the ALLOC step and all SAS PROCs prior to the SORT.

Copying SAS Data Libraries to Tape and Back

— *Ernie Froemel*

SAS data libraries are special datasets created by SAS which contain one or more SAS data files. Whenever a permanent SAS file is saved, it is usually saved on disk as a member of a data library. It is also possible to save and use libraries on magnetic tape, although that is less efficient from a processing perspective.

The *SAS User's Guide: Basics* Version 5 Edition states on page 586: "Do not copy SAS data libraries with anything but PROC COPY. If you use a non-SAS utility to copy SAS files, the files will be unreadable." PROC COPY will copy from disk to disk, from disk to tape, from tape to disk, and from tape to tape.

Utilities like FDR and IEHMOVE have been used to create backup copies of SAS data libraries, and

they worked adequately for that purpose. (Note that MOVESTOR and MOVEBACK are procedures that use IEHMOVE.) The libraries were unloaded when copied to tape and were properly reconstructed when copied back to the same type disk. Of course, the libraries were not useable while stored on the tape. As long as the purpose was only backup, and the libraries were copied back to the same kind of disk by the proper program, there was no problem in using these utilities.

Now that the Computation Center is converting from 3350-type disks to 3380-type disks, it becomes critical to use PROC COPY for copying libraries between disk and tape. This is because, **neither IEHMOVE nor FDR are able to properly reconstruct a SAS data library on a 3380 if it was copied to tape from a 3350.**

The Computation Center hopes to complete the conversion from 3350 to 3380 disks by the end of the summer. By that time, a mechanism will exist to allow recovery of SAS libraries which were copied to tape by means other than PROC COPY. However, that mechanism will not be available forever.

So, you are urged to use PROC COPY when copying SAS data libraries to tape. If you have SAS libraries on tape which were copied using IEHMOVE or FDR, bring them back to a 3350 disk and use PROC COPY to resave them on tape.

SAS/FSP (Full-Screen Product)

— *Jim Lichtenstein*

The Computation Center has decided to bring in the SAS/FSP Full-Screen Product until the end to this calendar year to see if people will find it useful.

Those that do find it useful are urged to let us know at 702-7165 so that we can make an in-

formed decision about whether to keep the product in 1988.

SAS/FSP provides seven new procedures oriented to full-screen work under VTAM TSO.

As indicated by the SAS/FSP User's Guide / Version 5 Edition, the procedures are:

1. _PROC FSCALC_ for using the capabilities of a full-range electronic spreadsheet package with SAS/FSP software;

2. _PROC FSCON_ for converting existing letter and screen data sets into catalogs for use with Version 5 SAS/FSP procedures;

3. _PROC FSBROWSE_ for displaying observations in a SAS data set;

4. _PROC FSEDIT_ for entering and editing observations in a SAS data set conveniently, including the use of customized screens;

5. _PROC FSLETTER_ for editing and printing letters;

6. _PROC FSLIST_ for browsing external files, such as files containing SAS source lines or output from SAS procedures;

7. _PROC FSPRINT_ for browsing SAS data sets in full-screen mode as tables of rows and columns.

To access these new procedures, logon to TSO through VTAM. Then, after the READY prompt, enter the command _SAS_.
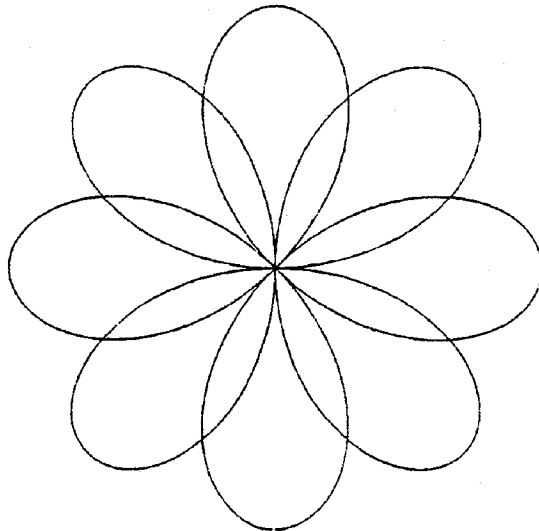
TOPS-20

DECsystem-20 Support

— Hal Bloom

During July, 1986, one of the Computation Center's DECsystem-20 computers (known as "Dale") was removed from service, as it was apparent that one machine could adequately handle the computing needs of our DECsystem-20 users. The removal of Dale did not result in significant changes in patterns of use. Both CPU use and connect-time continue to decline gradually. Administrative usage of the DEC has not changed much since July, while academic usage has been tapering off. From February through April of this year, total CPU use was 90% of total CPU use last year during the same period, and total connect-time was 75% of last year's corresponding total.

Current DECsystem-20 users can rest assured that the Center's remaining DECsystem-20 (called "Chip") will be here to greet them in the Fall, and will remain at least through the end of the academic year (June of 1988). The Graduate School of Business is planning to remove its remaining DECsystem-20 in June of 1988, but may still need access to a DECsystem-20 for some of its applications which will not have been converted by then. Some of the Center's larger users are planning conversions which will not be completed by July of 1988. Thus, it is very likely that Chip will remain available through June of 1989.

The Center has begun discussions with major 1022 users regarding their future plans and needs, and these discussions will continue as we investigate alternative data-base systems to fill the niche currently occupied by 1022. While some of these applications will be moving to departmental minis and micros, and others will be re-written to function under Model 204 on the Amdahl, we believe that there will still be a need for a centrally provided easy-to-use data-base system.

Currently, the DECsystem-20 is serving as an interface between the campus electronic mail network and off-campus BITNET mail, as well as providing on-campus and off-campus mail service through the MM program. We are investigating alternatives to replace both of these functions, and intend to enhance our services in this area.

We will continue meeting with major users of the DECsystem-20 in order to determine how we and they can best meet their computing needs in light of Chip's eventual demise. Users who have concerns which need attention should contact Hal Bloom at 702-7155 or send mail to Staff.Hal@Chip.

The Center intends to continue providing centralized time sharing for current and future users, but the size, diversity and nature of the service will be assessed in light of the availability of alternative distributed solutions.

Fortran on the DECsystem-20

— Joyce Weil

The Fortran compiler on Chip has been upgraded to Version 7. New features include:

  i.   character variables and arrays,
  ii.   block IF, ELSE IF, ELSE, END IF, DO WHILE and END DO constructs,
  iii. single and multi-record internal files,

iv.   ASSIGN of FORMAT statement numbers,

v.   a SAVE statement, and

vi.   expressions on output lists.

Character variables are supported for character assignments, substrings, concatenation, character relationals, character functions, and character arguments. Intrinsic functions that operate on character data are LEN, INDEX, CHAR, ICHAR, LGE, LGT, LLE, and LLT. For a complete description of the new features in Fortran 7, see MANUALS:FORTRAN7.

TEST FORTRAN (version 10) is a development release and contains the full implementation of the FORTRAN-77 standard. Extensions to Fortran 7 are the bit handling functions (see Summer '86 *Newsletter*), support for extended addressing, the INQUIRE statement, and hexidecimal values in DATA statements. This release brings DECsystem-20 and MVS VS Fortran to the same level, greatly easing the task of transporting programs between the two computers. Fortran 10 will become production on Chip this summer.

To use fortran 10, enter:

     @TEST FORTRAN

For further information, see Notice file entry FORT3 and MANUALS:FORTRAN10.

PYRAMID/UNIX

Sphinx News

— Tom Barron

The following are recent developments in the Pyramid Sphinx environment:

Tape Mounts: In response to increased demand for the Sphinx tape drive, users may now request that operators mount their tapes between 9:00 a.m. and 11:00 p.m. Between 11:00 p.m. and 9:00 a.m. the drive is reserved for systems jobs such as file system backups. Formerly, the tape drive was scheduled to be available to users only between 1:00 p.m. and 5:00 p.m.

Remember that there is only one tape drive on the Sphinx and that your mount request will be refused if the drive is already in use. Use the 'whomt' command to see if the tape drive is in use, and use 'man tapemount' and 'man whomt' to get on-line documentation.

Printing: We have fixed a synchronization problem with the spooling system for the Sphinx *qms* laser printer that intermittently caused the wrong fonts to be loaded for *troff* jobs. Formerly users who wanted to be sure that their *troff* jobs would print correctly would have to clear all downloaded fonts from the printer by means of the command 'qcat -p'. This command is no longer available to users; nor should it be needed. To report any bugs you may encounter with printing or with any other Sphinx software, send mail to user *bugs*.

Operating System: Before fall quarter, we will install a major new release of the Pyramid OSx operating system, equivalent to 4.3BSD in the UCB universe and to System V release 2.01 in the ATT universe.

The System V upgrade includes Documenter's Workbench, a family of programs for typesetting materials that contain equations, tables, and diagrams, as well as standard text. Among these programs is a new, more flexible device-independent *troff* text processor. Work is currently being done to support both the new *troff* and the popular *tex* text formatting language on the Sphinx *qms* laser printer.

The upgrade to 4.3BSD implies important network software improvements that should make possible, among other things, more direct *internet* mail service and the ability to use the 'talk' command to users on other 4.3BSD systems such as *gargoyle* and *oddjob*.

Other enhancements reportedly include an improved math library and substantial performance gains both in string library functions and such popular utility programs as *diff*, *sed*, *grep*, and *sort*.
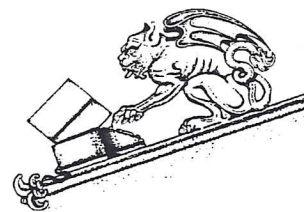
MICROCOMPUTING

D & D Lab: Hot New Items

— *Marc Jacobson*

The following new hardware and software now make their home in the Demonstration and Development Laboratory, at 1155 East 60th St. To make an appointment to have equipment demonstrated, or to examine software yourself, call 702-7151. The equipment and software include the following new additions and any other software or hardware listed in MICLAB on the DECsystem-20.

New Hardware:

The Lab now has a **Macintosh SE**. It looks and behaves very much like its fabled cousin (not brother — the insides are quite different), the Macintosh Plus, but is 15-20% faster. Improvements include a new keyboard with a softer touch, a new mouse with an optical shaft and teflon shoes, an internal 20Mb hard drive and 800K floppy drive, a power supply that can switch between 110 and 220 volt current automatically, and a fan to keep the Mac cool this summer.

Hewlett-Packard has introduced a new printer, the **LaserJet Series II**. It is fully compatible with its predecessor, the LaserJet Plus, but has been entirely revised, with better printing capabilities and a more ergonomic design.

The LJ Series II has the following features:

- serial and parallel interface switchable from an LCD control panel
- two font cartridge slots
- correct and reverse order output trays
- symbol sets which can be selected from control panel
- six built-in fonts and advanced graphics capability
- greater speed

Overall, the Series II represents a significant advance in the LaserJet line.

A very interesting addition to the Lab is the **Tandy 1000SX**, which has a high-resolution color monitor, an internal 20Mb hard drive, and two floppy drives. Its brain is an **Intel 8088** running at 4.77/7.16 MHz. One reason this computer is interesting is that its price is very low. Another is that a **Trackstar 128** board can be installed on it, as on the model in our Lab. This board is designed to turn the 1000SX into an Apple II (e, Plus, or c). It also modifies one of the floppy drives to operate both as a Unidisk and as a conventional 360K IBM-compatible drive. The 1000SX is on a short-term loan, so come see it soon.

New Software for IBM PC-compatibles:

Lotus Freelance Plus, version 2.0: a graphics editor which can be used to create "word slides", diagrams and drawings. Also used to edit 1-2-3 graphics files.

Lotus HAL, version 1.0: HAL (Human Access Language), a 1-2-3 companion which permits the use of intuitive English commands in conjunction with Lotus 1-2-3. It has enhanced macro generation capabilities.

Lotus Measure, v. 1.0: a software product for importing data directly from laboratory instruments into a 1-2-3 spreadsheet.

Lotus Metro, v. 1.0: a memory-resident desktop manager, including a wide range of desktop accessories.

Media Master Plus, v. 4.1/2.1: an excellent utility which allows an IBM PC-compatible to emulate a wide range of floppy drives on other computers, for the purpose of data migration (either direction).

Microsoft FORTRAN Optimizing Compiler, version1.0: a compiler that implements full ANSI 77 FORTRAN, with 8087/80287 math coprocessor support, large program support, interlanguage calling support for linking Microsoft C and Pascal programs, and a debugger called CodeView.

Microsoft Pascal Compiler, v. 3.32.

Microsoft QuickBASIC Compiler, v. 2.01: a QuickBASIC compiler that includes structured programming support, subprograms, alphanumeric labels, flexible array dimensioning, large numeric arrays (up to 64K), and metacommands, which allow you to control dimensioned array allocation and processing of additional source files from within a BASIC program.

Microsoft Word, version 3.1: a new edition of a popular word processor which includes new features such as a 220,000-word thesaurus, international date, time and decimal character formats, additional graphic card support, and new printer support (including the Apple LaserWriter Plus).

WordPerfect version 4.2: an upgrade to WordPerfect that has new printer drivers, including some PostScript printers, such as the Apple LaserWriter. Users can define new drivers themselves. Other features: auto vs. prompted hyphenation, date/time format, delete option with cut/copy, hidden text, comment text associated with documents, additional file conversion options. Search includes footnotes, faster indexing, line numbering, delete/print/copy/search through multiple files, display contents of file from "List Files" command, and other such features.

MS-DOS version 3.2.

REF-11 Bibliographic Database System: a data base management system for references. The reference creation, search, update and output operations are selected from a menu.

New Software for the Macintosh:

Business Filevision, version 1.1: To quote from the manual — "an information management package that integrates a full-function filing system and a complete drawing system with a versatile report generator.... Complete with computed fields, three-level sorting, and statistics.... Business Filevision represents information in pictures, as well as numbers and words. It sorts and analyzes the extensive data within these 'smart drawings'. It can produce a wide variety of business reports."

FullPaint Upgrade: a drawing/painting package which now includes ColorPrint, to print Graphics in color on an ImageWriter equipped with a color print ribbon.

Microsoft Basic Compiler, version 1.0: basically a BASIC for the Macintosh.

Microsoft Word, version 3.0: a powerful word processor. This new version has exciting new features such as Page Preview (displays entire page on screen as it will appear when printed), and "warm link" to Microsoft Excel (you can "associate" an Excel file with Microsoft Word 3.0 by imbedding the Excel graph in your Word text). Word v. 3.0 includes a spelling checker, an outliner, indexing, and a sorting routine.

PageMaker, version 2.0, by Aldus: a page layout/composition package with hyphenation and expanded publication size. Pagemaker can now handle 128-page documents and can incorporate them into 9,999-page documents with an automatic page-numbering feature, full support for scanned graphics, a facility to accept files which have been generated in IBM PC-based PageMaker v. 1.0, as well as text files from other IBM PC-based word processors. There are other new features as well.

Glue, v. 1.0 by Solutions, Inc: a print-to-disk utility which can be used in conjunction with programs such as Excel, MacProject, MacDraw, MacPaint and Microsoft Chart to transfer graphics into document preparation programs like MacWrite, Microsoft Word, MacPaint, ReadySetGo, or PageMaker. The graphics can be as large as a full printed page. Glue also makes it easy to capture printed output from document preparation programs

on disk in a graphic form independent of the software which created the graphic in the first place.

Tempo, version 1.2: software that allows a fairly experienced Macintosh user to create macros which can span software. Commands which are normally executed by the keyboard or the mouse may be stacked in a macro and executed with one keystroke. For Mac buffs, this is a truly exciting utility.

Please consult "MICLAB" on the DECsystem-20 at any time for complete listings of software and hardware available in the Lab (type "MICLAB" at the "@" prompt).

Micro Distribution Center Update

— *David Davoust*

The Microcomputer Distribution Center (MDC) sells microcomputer products at discounted prices to University departments, and to full-time faculty, staff, and students.

The MDC currently offers hardware from Apple, AST, Hewlett-Packard, IBM, U.S. Robotics and Zenith, and software from Apple, ArborWorks, Ashton-Tate, Living Video Text, Lotus, Microsoft, Minitab, Systat and WordPerfect. We are arranging to be supplied by Centram, Farallon, SuperMac and Venture as well.

We continue to evaluate and add new products that are of interest to the University community. If there is a product in which you have a strong interest, please send a note to David Davoust, University of Chicago Computation Center, 1155 E. 60th St., Chicago, IL 60637.

Apple has announced two new machines:

● *The Macintosh SE* looks similar to a Macintosh Plus, but runs 15-20% faster, has an internal 20Mb hard drive or a second internal 800K floppy, and features an expansion slot for adding additional monitors, memory, and other add-on boards. The SE is available now.

● *The Macintosh II* has a 68020 processor with a 68881 math coprocessor, an open architecture with 8 expansion slots, and a choice of color or monochrome monitors. Apple reports that we will receive a limited number of Macintosh II units each month through the summer, and that the product should be readily available by Fall.

All of the new Apple products including the Macintosh II are detailed in a product description attached to the MDC's Apple price list. AST has also announced MS-DOS boards for the SE and the Macintosh II. These will allow one to run MS-DOS applications on a hard drive Macintosh SE or Macintosh II. The AST boards should be available in the Fall.

IBM has also announced a barrage of new products that include eight new computers, four new displays, five new printers, and a new operating system which might change the entire MS-DOS standard. These products are described in detail in the product description attached to the MDC's MS-DOS price list.

Other vendors have been busy as well. U.S. Robotics has a new low-cost 1200 baud modem. Microsoft has announced a maintenance release for Word version 3.0 for the Macintosh. The new product will support the Macintosh II, will fix bugs found in 3.0, and should be available late July. Upgrades from version 3.0 will be free. Zenith has announced two new versions of its 181 laptop, which was named "Product of the Year" for 1986 by *PC Magazine*. One of the new models will include a 10Mb hard drive. Also, the MDC has signed a site license agreement with Systat. We now sell Systat version 3.0 for the Macintosh and for MS-DOS machines. Systat has informed us that there will be a new version for the Macintosh this summer.

The Computation Center provides service on all Apple products, and service contracts are available from the MDC. Service on MS-DOS products is offered through a third party service company, REX Service.

Demonstrations of some items can be arranged by appointment with the Computation Center Demonstration and Development Lab (702-7178).

Pricelists are available on the third floor of the Computation Center (1155 E. 60th St), at Usite (Wieboldt 310), and at the MDC.

The MDC is open Monday through Friday from 10:00 a.m. to 4:00 p.m. and is located in the basement of the New Graduate Student Residence Hall at 1307 E. 60th St. (Please enter through the rear door.) You can call the Microcomputer Distribution Center at 702-6086.

If you have special needs, feel free to call the MDC at 702-6086 or Joyce Morris, the Administrative Coordinator, at 702-6082.

DEPARTMENTS

People

Open Positions at the Center

The following full-time positions were open at the Computation Center as of May 28. Detailed descriptions of the positions may be obtained from the Center's receptionist or from the person listed with each position. The University is an affirmative action/equal opportunity employer.
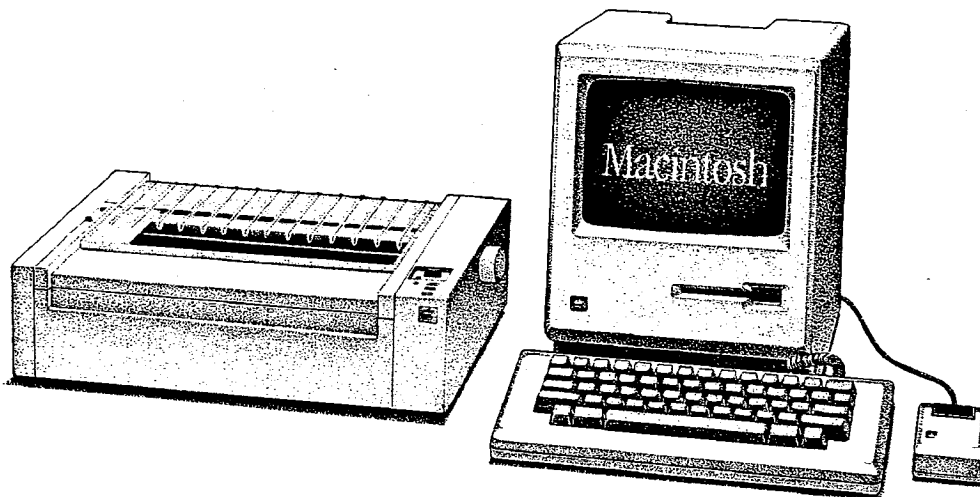
People who have joined the Center:

Ejaz Ahmad has joined the Center as a Junior Programmer/Analyst II in Applications Systems. **William Flachsbart**, **Lawrence Lerner**, **Donald McLellan**, and **Theodore Reichardt** have been hired as Student Program Advisors. **Michael Heinz** is a Programmer/Analyst in Administrative Information Services. **John Park** has joined the Center as a Stock Clerk in the Microcomputer Distribution Center.

Transfers/Promotions within the Center:

Major Robinson has transferred to Production Expeditor Trainee in Expediting Services. **Peter Godwin** has been promoted to Student Program Advisor.

People who have left the Center:

Andrew Brown and **Ravindra Nemana**, Stock Clerks in the Microcomputer Distribution Center, have left. **Farhad Anklesaria** and **Melinda Shore**, Programmer/Analysts in Applications Systems, have left. In Administrative Information Services, **Bernard Clark**, Programmer/Analyst and **Martin Neudel**, Senior Programmer/Analyst, have left. **Thomascz Sobczak**, Production Expeditor, has left. **James Stevens**, Student Program Advisor, has left.

Senior Systems Programmer - Responsible for systems program development, installation, maintenance, performance analysis and tuning. Requirements include two to five years experience in one or more of the following operating systems: MVS, TOPS-20, Unix. Michael E. Willey, 702-7617.

Senior Programmer/Analyst - Responsible for installation and maintenance of application programs on the operating systems above. Requirements include superior programming skills and knowledge of minicomputers and microcomputers. Donald H. Goldhamer, 702-7166.

Senior Analyst - Responsible for consulting with the University on microcomputing, LANs, and advanced workstations. Requirements include two to three years experience, excellent interpersonal skills, significant experience with micros, especially Macintosh. George R. Bateman, 702-7174.

Programmer/Analyst - Responsible for analysis and programming support of the Center's billing and management reporting systems. Requirements include superior skills in PL/I. Peter B. Hayward, 702-8671.

Documentation

New Documentation Available

05/19/87 **R187B** *SuperWylbur Text Editing*
R187B is the SuperWylbur Text Editing Manual for Version 3.7 of SuperWylbur. It discusses all the resources of SuperWylbur for editing text. Important specific differences from previous versions of SuperWylbur are available in the SuperWylbur HELP files under HELP V37NEW and HELP V37BUGS.

05/13/87 **4378** *T$_E$X at the U of C*
Memo 4378 describes the resources and workings of T$_E$X on the three U of C mainframes. T$_E$X is a powerful typesetting program which specializes in technical and mathematical text. This memo details the relationship between T$_E$X and its various associated programs and enhancements: Dvixer, dvitoc, LaT$_E$X and METAFONT. In addition, the memo provides access to a macro which will print another memo written in T$_E$X code, which serves as a basic introduction to .the vocabulary and grammar of T$_E$X and an illustration of its resources.

03/24/87 **R187A** *SuperWylbur v.37 Help Files*
SuperWylbur version 3.7 Help files are collected in this manual.

03/12/87 **R79** *DEC Pascal-20*
Pascal-20 Reference Manual. This manual describes version 14 of Pascal on the DEC-20. It replaces the older manual.

03/12/87 **R186B** *TSO/Superset Utility Messages*
TSO/Superset Utilities Message Guide. Contains all error and informational messages issued by any of the Utilities commands.

03/12/87 **R186A** *TSO/Superset Utilities User's Guide*
TSO/Superset Utilities User's Guide. Describes the TSO commands to copy, compare, format, and manipulate programs, data, and job output from a TSO terminal.

03/12/87 **R185F** *GML 86.1 Implementation Guide*
GML Implementation Guide for Version 86.1. This manual contains an overview of the components of GML and describes how to use Script to define GML Tags and Attributes.

03/12/87 **R185E** *GML 86.1 Reference Summary*
GML Reference Summary for Version 86.1. This manual provides a summary of the commands and syntax for the GML Tags in the various GML layouts.

03/12/87 **R185D** *GML 86.1 Users Guide*
GML User's Guide for Version 86.1. This manual describes the GML (General Markup Language) Tags in the different layouts and their function.

03/12/87 **R185C** *Script 86.1 User's Guide*
Script User's Guide for Version 86.1. This manual is an introductory overview of the functions and use of Script 86.1.

03/12/87 **R185B** *Script 86.1 Reference Summary*
Script Reference Summary for Version 86.1. This is a two-column summary of command syntax for Script 86.1.

03/12/87 **R185A** *Script 86.1 Reference Manual*
Script Reference Manual for Version 86.1. This manual documents all the control words, options, symbols, and error messages for Script version 86.1. It is arranged alphabetically by control word.

Recently Updated Documentation

05/21/87 **4305** *Advanced SuperWylbur Features*

05/21/87 **4310** *Introduction to SuperWylbur*

New in the MVS Notice File

05/14/87 **SAS25** *Use PROC COPY when moving SAS data to tape*

05/14/87 **TEXX3** *Problems with T_EX and vtam*

04/29/87 **DISK7** *Illegal dataset names to be changed*

04/01/87 **DISK6** *Convert now for 3380 disk drives*

03/27/87 **TSO7** *Reconnecting after a dropped line*

03/25/87 **SPSS26** *Release 2.2 available for testing*

03/23/87 **TEXX2** *CM and LaT$_E$X fonts now available for T_EX*

03/12/87 **TSO6** *TSO Superset Utility Manuals*

03/12/87 **SCRP22** *Script 86.1 Manuals in Doclist*

New in the DEC Notice File

04/17/87 **FORT3** *Passing String with Fortran 7*

03/23/87 **TEX6** *CM and LaT$_E$X fonts now available*

03/13/87 **SCRP4** *Script 86.1 Manuals in Doclist*

03/13/87 **PAS3** *Pascal version 14 documentation*

03/11/87 **TEX5** *DVIDOC on Chip*

Index of Center Newsletters

The following index covers the last ten issues of the *Computation Center Newsletter*, from the February 1985 issue through Spring 1987. Within this period, the *Newsletter* changed from a monthly to a quarterly publication. As a result, "Feb'85" refers to February 1985, while all of the other abbreviations refer to seasons: "W" - Winter, "F" - Fall, "Su" - Summer, "Sp" - Spring.

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860 and the DEC-20, Chip.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization February 1987 - April 1987

Service Provided	Amdahl 5860/MVS February 1987	Amdahl 5860/MVS March 1987	Amdahl 5860/MVS April 1987
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	n.a.	2:06	2:22
non-setup jobs	n.a.	1:25	1:26
tape setup jobs	n.a.	11:21	15:47
Total CPU-hours used	193 hrs 0 min	214 hrs 54 min	229 hrs 6 min
SuperWylbur sessions	16,456	18,181	18,507
CPU hours	5 hrs 59 min	6 hrs 47 min	6 hrs 44 min
connect hours	11,232	12,681	12,660
average session	41 min	42 min	41 min
average CPU/session	1.31 sec	1.34 sec	1.31 sec
TSO sessions	4,187	4,165	4,570
CPU hours	5 hrs 27 min	6 hrs 35 min	7 hrs 24 min
connect hours	1,952 hrs	1,997 hrs	2,409 hrs
average session	28 min	29 min	32 min
average CPU/session	4.69 sec	5.69 sec	5.84 sec
Jobs submitted	50,357	57,911	56,971
Steps executed	97,476	113,236	108,522

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown).

The reported connect time does not include Model 204 or CICS.

"n.a." means that the data is currently not available.

Top Twenty MVS Programs February 1987 - April 1987

Program	Description	Percent	Count
UCFLBL20	Filebol	9.23	33,222
SASLPA	SAS	8.72	31,361
WYLLIST	SuperWylbur list offline	6.01	21,635
IEBGENER	IBM file handling utility	4.95	17,817
SORT	SyncSort	4.82	17,351
IEFBR14	IBM utility - null step	3.31	11,907
IDCAMS	VSAM utility for catalog operations	3.16	11,386
IBMDEC	IBM/DEC link utility	3.01	10,815
IEWL	Linkage editor	2.94	10,593
SUCCESS	Operating Services utility	2.69	9,679
FAIL	Operating Services utility	2.67	9,596
MARKYBOL	Systems utility	2.21	7,966
SPSSX	SPSS Version X	2.16	7,780
BATCH204	Model 204 run in batch	1.95	7,018
MAILXBM	Bitnet mail through SuperWylbur	1.67	6,011
COMPUSET	Xerox text composing program	1.30	4,691
MVGDG	Multi-volume tape GDG cycler	1.15	4,139
XRXINT	Xerox print formatter	1.14	4,103
IKFCBLOO	VS Cobol version 2.4	1.10	3,945
UOCVTOC	List volume table of contents	1.01	3,630

CHIP - DECsystem-2060 Utilization February 1987 - April 1987

Account Period	February 1987		March 1987		April 1987	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	87.7	5314	105.7	5962	102.3	6086
EVENING	36.3	940	46.3	1057	34.8	1241
OVERNIGHT	77.5	1014	90.3	1319	88.7	1576
TOTAL	201.5	7268	242.3	8338	225.8	8903

Top Twenty Chip Programs February 1987 - April 1987

Program	Description	Percent	Count
OPR	Operator functions	9.26	25,973
MM	Electronic Mail Manager	8.65	24,257
EXEC	TOPS-20 command processor	5.21	14,597
PTYCON	Pseudo-terminal controller	4.56	12,779
SYSDPY	Operator interface with job queues	4.51	12,660
WATCH	Generates these statistics	4.49	12,592
SYSJOB	System job controller	4.49	12,589
RWHOD	Lists users on ethernet hosts	4.49	12,589
MMAILR	Network mail daemon	4.49	12,585
IBMSPL	MVS link daemon	4.48	12,573
NETSRV	Supports ethernet network functions	4.48	12,572
WINDOW	Full screen PTYCON	4.48	12,551
USAGE	Utility to collect program use data	4.37	12,245
BITNET	Off-campus electronic mail network	4.35	12,188
1022	Database system	4.08	11,452
MUSE	Full screen editor	3.93	11,033
MINITA	Interactive statistical program	2.52	7,071
DEMAND	Data management system	2.17	6,085
EMACS	Full screen editor	2.06	5,787
BATCON	Batch Controller	1.94	5,432

General Information

Computation Center Administration

Acting Director of the Computation Center	John E. Iannantuoni	702-7616
Associate Director Operations and Technical Services	John E. Iannantuoni	702-7616
Assistant Directors		
Instruction and Research Information Services	Harold C. Bloom	702-7155
Information Technologies and New Services	George R. Bateman	702-7174
Finance and Administration	Peter B. Hayward	702-8671
Administrative Information Services	David E. Trevvett	702-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	702-7151
Microcomputer Distribution Center	1307 E. 60th St., Rear Entrance	702-6086
Multi-media Classroom	Harper 406	702-7153
Usite Terminal Cluster	Wieboldt 310	702-7894

Computer Communications Information

Phones	300 baud	1200 baud	2400 baud	4800 baud	9600 baud
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	300 baud	1200 baud	2400 baud	4800 baud	9600 baud	telenet
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	mvs24/vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20	chip	chip	chip	chip	chip	chiptn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	General address form	Example
Amdahl 5860 (MVS)	logonid@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username@chip.uchicago	staff.hal@chip.uchicago
Pyramid 90x (Sphinx)	person-id@sphinx.uchicago	halb@sphinx.uchicago

Telenet dial-in information

	Nearest phone number	Network address
	800-336-0437 most states	312436 (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)
		312437 (2400 baud - DEC only)

Quick Reference Phone Directory

On January 1, 1987, all **962** exchanges became **702**.

Information
General 702-7151
Machine status 702-7626

Accounts
Billing information & records 702-7158
Opening class accounts 702-7159
Opening PCA and regular accounts . . . 702-7158
Refunds 702-7624

Advice and help
Applications software 702-7624
    Reporting problems
    Suggestions & complaints
Office support systems 702-7174
    Microcomputers
    Terminals
    Word processors

Computer supplies & tapes 702-7159

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Microcomputer custom services 702-7453
Printing 702-6081
Programming 702-7166

Data entry services 702-7604

Dataset recovery
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Purchase micro service contracts 702-6086

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Production jobs & special handling . . 702-7602

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Microcomputer service contracts 702-6086
Used equipment 702-7615

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Terminals 702-7663

Subscriptions to the Newsletter 702-7159

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

> **Newsletter Subscriptions**
> **University of Chicago**
> **Computation Center**
> **1155 E. 60th Street**
> **Chicago, IL 60637**

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
_____

City
_____

State   Zip
_____

The University of Chicago
Computation Center
NEWSLETTER

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GENERAL NEWS

An Interview with the Director of University Computing Resources

During the summer, the University of Chicago created the position of Assistant Provost and Director of University Computing Resources. What follows is an edited interview with Scott Teissler, the person who now occupies that position.

Q. Scott, welcome back to the University. Could you give us some background on your past association with the University of Chicago?
A. I have been associated with the University of Chicago in one capacity or another since 1974 when I came here to take an MBA at the Graduate School of Business. For seven years I looked after the GSB's computing operation. I first started in Systems working for Gary Curtis and then became Director, working for Robert Graves. I'm not sure what our most notable achievements over there were; however, I do think we set the pace for divisional computing here or most anyplace else. We also did create a fairly remarkable application — the registration by bidding that the business students use.

Q. Where have you been since you left the University?
A. For the past three years I have been running the engineering organization for a new venture of Pacific Telesis, the California equivalent of Ameritech. It was called PacTel Spectrum Services and we sold wide area data network management services based on proprietary database and network-testing technology.

Q. What brings you back to the University?
A. I returned to Chicago because I thought the new position was just right for me, and I (it is speculated) for it.

Q. How do you characterize the responsibilities of your new job?
A. It is important for the administration of this University to be able to formulate useful policy regarding computing across the campus, both administrative and academic. Forming such a policy is a continual activity that is predicated on acquiring, analyzing, and acting on knowledge about University-wide computing needs and resources. This includes developing a global understanding of computing activity on campus as well as some understanding of the motivations, requirements, and plans of the various participants.

Q. What effect will such a University-wide computing policy have on the existing campus computing organizations?
A. Successfully employing the policy may require additional autonomy to be encouraged here; more collaboration to be encouraged there; and, generally, an ability to see through or beyond current boundaries, be they systemic or organizational or institutional. It will also require that the separate organizations and computing resources involved be well run and run in the right directions. This is especially important in the case of the Computation Center since it is the largest such resource at the University and has the broadest charter to serve the University community.

Q. Where do you fit in the management hierarchy of the Computation Center?
A. The Computation Center reports to me. Within that context, it is my business to foster the kinds of effective understanding and policies which have eluded us for some years — largely because we have been concentrating on other urgent matters. However, I report to Robert Graves, sharing that part of his charge having to do with University computing. Because of those dual roles, I see myself involved more with policy and University-

wide issues than with the day-to-day operating details of the Computation Center.

Q.   Is there anything else you would like to say to the University computing community, at least to those who read the Newsletter?
A.   Computing at the University is rather a complicated multiple sum over individuals, research projects and interests, divisions and departments, and different technologies. We, the University, have to learn to distinguish and encourage what works the best; and, we have to learn to prepare the ground so that our next round of choices keeps us competitive with comparable institutions.

If I'm to be effective, I have to be seen by everyone here as an advocate or a champion or a way-to-get-things-done or as an essential participant in new and contemplated ventures. My position is meant to strengthen computing at this University, and that means that the members of the institution must take advantage of it.

The Board of Computing Activities and Services 1987-88

The Board of Computing Activities and Services was established to provide policy and general guidance to the University in all matters of computing activity and services. It advises the President and Provost with respect to all such matters; it sets policies regulating the scope, functions and objectives of the Computation Center and computing activities and services on campus; it develops, reviews and recommends long-range plans; and it reviews and recommends approval of the annual Computation Center budget for expenditures and income.

The members of the Board of Computing Activities and Services for 1987-88 are:

Robert <u>L.</u> *Graves, Chairman*, Associate Provost

Anthony <u>Bryk</u>, Associate Professor, Department of Education and the College

Eugene <u>DeSombre</u>, Professor, Ben May Laboratory

Larry <u>V.</u> <u>Hedges</u>, Associate Professor, Department of Education and the College

Julius <u>Kirshner</u>, Professor, Department of History and the College

Richard <u>Leftwich</u>, Professor, Graduate School of Business

Marvin <u>W.</u> <u>Makinen</u>, Professor, Departments of Biochemistry and Molecular Biology and the College

Peter <u>McCullagh</u>, Professor, Department of Statistics and the College

Robert <u>J.</u> <u>Morrissey</u>, Associate Professor, Department of Romance Languages and Literatures, Committee on General Studies in Humanities, and the College

Howard <u>Nusbaum</u>, Assistant Professor, Department of Behavioral Sciences and the College

Michael <u>O'Donnell</u>, Chairman, Department of Computer Science

Charles <u>Pelizzari</u>, Assistant Professor, Department of Radiation Oncology

James <u>E.</u> <u>Pilcher</u>, Professor, Department of Physics, Enrico Fermi Institute, and the College

George <u>B.</u> <u>Walsh</u>, Associate Professor, Department of Classical Languages and Literatures, Committee on General Studies in Humanities, and the College

Scott <u>Teissler</u>, Assistant Provost and Director of University Computing Resources, *ex officio*

Walter <u>E.</u> <u>Massey</u>, Vice President for Research and for Argonne National Laboratory, *ex officio*

Martin Runkle, Director of the University Library, ex officio

Norman M. Bradburn, Provost, ex officio

Hanna H. Gray, President, ex officio

Departmental Computer Systems — We Can Help

— Mike Willey

In addition to mainframe and microcomputing services, the Computation Center is involved in supporting distributed computing on campus. These efforts include campus networking and software/hardware support for departmental computer systems.

Networking:

The Center provides hardware and software maintenance for the campus Ethernet. This activity includes assisting in the connection of various departmental computers to the network.

The Center also provides the institutional and technical representatives for Bitnet support on campus.

The Center has installed several Appletalk-to-Ethernet gateways for departments.

In addition, the Center has assisted several departments in the design and implementation of computer cabling for local and remote computing networks in several campus buildings. This activity includes standard RS-232, IBM coaxial, Novell, Appletalk, and Ethernet configurations.

Departmental Computer Support:

The Center has provided departments with one-time or continual support of their computer systems. Among other departmental support, the Computation Center:

- has coordinated hardware installation of SUN workstations for departments.

- has installed Unix operating systems for departments.

- maintains a VM operating system running on a department's IBM 4381 and provides support for its upgrades.

- has coordinated distribution of Convergent Technology systems for the Provost's Office and has provided on-going consultation concerning software support.

- houses and provides system support for an academic division's AT&T 3B15 computer system.

- has assigned two full-time applications programmers to the development of software on departmental computer systems.

- has helped several departments with the installation of hardware and software for small systems; with system conversions and the associated data transfers; with recovery from system problems; and with on-going software maintenance.

All the above activities are recent endeavors by the Center. With the increasing number of small systems on campus, we at the Center recognize that it is critical to the productive use of such systems that the end users are not excessively burdened with system-management overhead. The Center would like to assist departments in achieving a productive computing environment. Though rendering such services is limited by the availability of Center personnel, their experience can provide quality assistance for immediate needs and for

long-term support of your computer system.

If you need assistance in the design or installation of computer network cabling, contact Bob Vonderohe, Manager of Communications Services, at 702-7658. If you would like the Center to help with system installation or software support, contact Hal Bloom, Assistant Director for Instruction and Research Information Services, at 702-7155.

IMSL Version 10 Available

— *Joyce Weil*

IMSL version 10, a major revision, is now available. In this version, the IMSL library has evolved into three new libraries: mathematics, statistics and special functions. These three libraries contain most of the functionality of version 9.2 plus many new routines. Although the new routines are generally easier to use than those of version 9.2, certain changes may be necessary for the user's program to work with version 10. Most of the statistical analysis programs now allow printing of results, handle missing values and implement advanced algorithms.

The routines have been rewritten to facilitate their use. The error parameter in the argument list has been abolished and errors now print informative messages. Workspace is now allocated from a common area, eliminating the need for setting up work arrays in a dimension statement.

On MVS, IMSL is written in VS FORTRAN. On DECsystem-20 Chip, IMSL is written in FORTRAN 10, but it should also work with programs compiled under FORTRAN 6 & 7. On both computers, all three of the IMSL libraries have been combined into one IMSL module.

The double- and single-precision versions of the subprograms are combined in these libraries.

Where there are both single- and double-precision versions of an IMSL routine, they have different names. This is different from version 9.2 IMSL.

A set of interface routines is available to ease the transition to the new version. The interface library allows the user to call the IMSL 10 routines using the version 9.2 subroutine calls. If there is no IMSL 10 routine corresponding to the 9.2 version, the library interface will issue an error message and all output values will be set to zero. If the result of using a new library routine is not the same as with the old version, a warning message will be returned. If the differences between the two libraries cannnot be resolved, the interface will print a summary of the changes necessary to convert to the new routines. Since using IMSL in this manner is inefficient, users are urged to modify their programs to use the version 10 routines.

There is no support for WATFIV with this version of IMSL. The Center will continue to keep the WATFIV implementation of IMSL version 9.2 for WATFIV users.

There is no on-line documentation for IMSL version 10. Printed documentation, however, is available in the clusters. Manuals are available in three softcover volumes:

MATH/LIBRARY USERS MANUAL, v. 1 ($15.00)
STAT/LIBRARY USERS MANUAL, v. 1 ($15.00)
SFUN/LIBRARY USERS MANUAL, v. 2 ($ 7.00)

These can be ordered from:

> *IMSL*
> *Customer Relations*
> *2500 ParkWest Tower One*
> *2500 CityWest Boulevard*
> *Houston, Texas 77042-3020*

Currently, IMSL version 10 on the DEC-20 is in test. To use it, first:

   @ test imsl

and then:

   @ exec myprog,sys:imsl/lib

or, if using the interface:

@ exec myprog,sys:imsl/lib,sys:iface/lib

To use IMSL version 10 on MVS, use the following JCL step:

```
//stepname EXEC FORTVCLG,
//     USERLIB = 'SYS2.IMSL10'
```

or, for the interface:

```
//stepname EXEC FORTVCLG,
//     USERLIB = 'SYS2.IMSL10'
 ...program statements...
//LKED.SYSLIB DD DSN = SYS2.IMSL10.IFACE,
//     DISP = SHR
//   DD DSN = SYS1.VLNKMLIB,DISP = SHR
//   DD DSN = SYS1.VFORTLIB,DISP = SHR
```

NOTE: for the double-precision interface, SYS2.IMSL10.IDFACE should be used instead of SYS2.IMSL10.IFACE in the first DD statement above as follows:

```
//LKED.SYSLIB DD DSN = SYS2.IMSL10.IDFACE,
//     DISP = SHR
```

Since IMSL version 9.2 will be removed shortly and the interface libraries will only be kept for a limited time, users should plan to modify their programs soon to take advantage of the new routines.

To obtain copies of interface routines from tape:

```
//jobname  JOB  logon-id,'programmer-name'
/*JOBPARM  ROOM = room
/*SETUP  VOL = T99135
//stepname EXEC IEBCOPY
//SYSPRINT DD SYSOUT = *
//SYSUT3 DD UNIT = SYSDA,SPACE = (TRK,(1,1))
//SYSUT4 DD UNIT = SYSDA,SPACE = (TRK,(1,1))
//IN  DD DSN = IMSLIFSP,UNIT = TAPE9,
//   VOL = SER = T99135,DISP = OLD,LABEL = (4,SL,,IN)
//OUT  DD DSN = logon-id.pdsname,
//   UNIT = SYSDA,VOL = SER = STORxx,
//   DISP = (NEW,KEEP),SPACE = (TRK,(2,2,1),RLSE),
//   DCB = (RECFM = FB,LRECL = 80,BLKSIZE = 3200)
  COPY OUTDD = OUT,INDD = IN
  SELECT MEMBER = routine1,routine2,routine3
```

where *routine1, routine2,* and *routine3* are the names of the interface routines desired. Each inter-

face routine takes its name from the corresponding IMSL routine.

NOTE: for the double-precision interface, DSN = IMSLIFDP and the file is the third on the tape, so that the following //IN DD statement should replace the one above:

```
//IN  DD DSN = IMSLIFDP,UNIT = TAPE9,
//   VOL = SER = T99135,DISP = OLD,LABEL = (3,SL,,IN)
```

Detail Program Modified

— *Kay Sandacz*

The Detail program, which allows users to track individual job charges by project and person, was substantially modified over the summer. The changes to the program are reflected in the Super-Wylbur public macro Detail, which prompts users for report parameters.

The major enhancement is that the job-charges data are available for a period of up to two months, rather than the ten days previously available. In addition, a project administrator can request a report on up to ten projects in a single run.

The resulting report is printed in a clearer format. The option of writing a disk file rather than generating a report now results in raw accounting data being written to disk, so users can customize their own reporting programs without having to strip header lines.

Note that the additional data available can result in a costlier job, if a user requests a report that crosses month boundaries.

To generate a Detail report, type

pub detail

while logged on to Superwylbur. Help is available within the macro by responding "?" to any prompt. Specifics are given in Memo 4349, available through Doclist.

Computation Center Seminars for Fall Quarter

The Computation Center is offering several short seminars during the Fall Quarter which will be open to the general University community. These seminars are free of charge and are designed for the new computer user. Except where prerequisites are noted, no prior knowledge of computers is necessary. *All seminars meet in Harper 406, starting at 3:30 p.m. and ending at 5:00 p.m. on the dates shown below.*

CC115 — Orientation to UofC Computing

Date(s):	Fri., 10/02/87
Prerequisites:	None
Instructor:	Donald Tom

This seminar will identify the various departmental computers, microcomputer sites, and Computation Center computers which are available on campus. Ethernet, the network connecting several of these computers, will also be described. A major part of the seminar will be a description of the Computation Center facilities and the differences between them.

The seminar will begin with a short tour of the Central User's Site (Usite) and move to the multimedia classroom (Harper 406) for the main part of the presentation.

CC205 — Introduction to the Amdahl 5860

Date(s):	Part 1: Mon., 10/05/87
	Part 2: Tue., 10/06/87
	Part 3: Wed., 10/07/87
Prerequisites:	None
Instructor:	Ernie Froemel

This three-part seminar will introduce you to the large mainframe, the Amdahl 5860.

Part 1 (1.5 hours) will describe the major components of the system and explain the basic features of SuperWylbur, in particular how to logon, how to create and edit text, how to save and scratch files, and how to run batch jobs.

Part 2 (1.5 hours) will describe the dataset security system and explain how to use TSO to logon and create or change dataset access rules. Using AMDB to monitor account status will also be discussed.

Part 3 (1.5 hours) is devoted to the full-screen products on the Amdahl. Both Full Screen SuperWylbur and ISPF on TSO will be demonstrated.

CC210 — Introduction to the DEC-20

Date(s):	Part 1: Thu., 10/15/87
	Part 2: Fri., 10/16/87
Prerequisites:	None
Instructor:	Beth Christy

Part 1 (1.5 hours) introduces the DEC-20 at the University of Chicago. Logging on, the command structure, and the file system will be explained.

Part 2 (1.5 hours) will survey the software available on the DEC-20 and demonstrate basic commands for creating and manipulating files.

CC220 — Introduction to the Pyramid/Unix System

Date(s):   Part 1: Thu., 10/08/87
                Part 2: Fri., 10/09/87
Prerequisites: None
Instructor: Sam Gassel

This seminar is a practical introduction to the Pyramid/Unix system, known as "Sphinx" at the Center. It will stress how to logon to the system and will demonstrate some of its basic features.

Part 2 (1.5 hours) will demonstrate more of the basic commands. The differences between "Computation Center" Unix and "standard" Unix will also be discussed.

CC430 — Text Formatting with Script and Treatise

Date(s):   Part 1: Mon., 10/19/87
                Part 2: Tue., 10/20/87
Prerequisites: CC 205
Instructor: Don Goldhamer

Part 1 (1.5 hours) will discuss using Script to prepare text (books, papers, letters, etc.) on the Amdahl 5860.

Part 2 (1.5 hours) will explain how to use

Treatise, a program designed to format dissertations according to University standards.

CC470 — Typesetting Emulation with Xset

Date(s):   Thu., 10/22/87
Prerequisites: CC 205
Instructor: Joyce Weil

Creating resumes or other text, such as this *Newsletter*, is simplified by using Xset. This seminar will focus on the Xset environment and commands.

CC910 — Electronic Mail at the UofC

Date(s):   Wed., 10/21/87
Prerequisites: Either CC205 or CC210 or CC220
Instructor: Eric Nelson

This seminar will describe the local mail systems on the Computation Center computers. It will also discuss how to send mail or files between computers on campus, and between a campus computer and an off-campus computer, even one across the world. Specifically, the seminar will describe the use of Bitnet, Ethernet, UUCP and ARPA Internet.

MVS

Conversion to IBM 3380 Disks Continues

— *Ernie Froemel*

As you return to campus, you discover that PUB001 isn't there anymore; that your JCL using TEMP01 fails; and, in some cases, that dataset names have changed. Much of this confusion may be attributed to requirements for converting to IBM 3380 disks.

Articles in the Spring 1987 *Newsletter* discussed the features of the IBM 3380 disk packs. In the Summer 1987 issue, articles discussed both the plan for conversion and the implications for the user. This article will let you know what has happened with that conversion process.

In general, the old disks named PUB001 through PUB021 have been replaced by new disks called STOR01 through STOR07. Similarly, the old temporary disks called TEMP01 through TEMP03 were replaced by new disks called WORK01 and WORK02.

Note that WORK02 now has the same restrictions that TEMP03 had, in as much as permanent datasets cannot be stored on WORK02. This is meant to assure the availability of the temporary space required by most jobs.

All datasets were moved from the old PUBxxx disks to the STORxx packs, as follows:

From disk:	To disk:
PUB001 - PUB003	STOR07
PUB004 - PUB006	STOR06
PUB007 - PUB009	STOR05
PUB010 - PUB012	STOR04
PUB013 - PUB015	STOR03
PUB016 - PUB018	STOR02
PUB019 - PUB021	STOR01

However, all datasets have been cataloged, so you will be able to locate individual files with a Super-Wylbur command like the following:

show dsn mydata on cat

The process of moving and cataloging these datasets required that datasets be properly and uniquely named. So, as a prelude to moving datasets, those with illegal names had to be renamed. That process was done on May 11, 1987. SuperWylbur mail was sent to all logon-ids which showed illegally named datasets. Users with a large number of such datasets were contacted by telephone, where possible.

Dataset names were changed from the form:

prefix.illegal-name

to the form:

prefix.ILGseq

where *seq* is a four-digit number, and *prefix* is either a logon-id or a project-id.

A SuperWylbur macro is available to identify the new name for any dataset whose name was changed. To call that macro, logon to SuperWylbur and enter:

pub names

You will be prompted for the *prefix* and a list of old and new names will be displayed at your terminal. You may also request that the list be saved into a permanent file.

Since a 3380 disk holds more data than a 3350, datasets from more than one PUBxxx disk were moved to a single 3380. Two datasets on two different PUBxxx disks could have the same name; however, they could not have the same name when moved to the same 3380 STORxx disk.

Before moving datasets to the 3380s, each dataset with a duplicate name was renamed by suffixing both the name of the PUBxxx disk that held the dataset and the dataset's creation date to the original dataset name. Note that a dataset's "creation date" is the date on which the dataset was created on MVS. For example, if datasets named BIGUSER.MYDATA existed on both PUB007 and PUB014, they were renamed as:

> BIGUSER.MYDATA.PUB007.D*creation-date1*
and
> BIGUSER.MYDATA.PUB014.D*creation-date2*

where *creation-date1* and *creation-date2* are six-digit numbers, like *090687*, representing the two datasets' creation dates.

All datasets moved to 3380 disks were cataloged, so BIGUSER may logon to SuperWylbur and locate those renamed datasets with the command:

> *show dsns like mydata on cat*

It may be necessary to change your existing JCL and macros — including your WYLIB%PROFILE if you use it — to account for the change to the IBM 3380 disks. A cataloged procedure and a Super-Wylbur macro have been developed to help you identify changes that should be made. Also, it is recommended to consolidate small datasets into partitioned datasets and to adjust blocksizes for greater efficiency.

These conversion aids and suggestions are discussed in memo 4379, available through the Doclist program. To use the program, just enter:

> *doclist*

at the SuperWylbur "?" prompt, and answer its questions.

Finally, we are aware that some datasets copied to tape from 3350s may not be recoverable to 3380s. In particular, SAS data libraries previously copied to tape using IEHMOVE or FDR cannot be restored to 3380s. If you need to restore such datasets, contact the program advisor at Usite (702-7624) for assistance.

Plans for Ethernet Access to MVS

— *Ron Rusnak*

The Center's current plans for Ethernet access to MVS include providing the following procedures:

The TELNET protocol provides for line-oriented terminal services to and from network hosts. In addition, TELNET allows full-screen access to MVS/TSO from Unix-based systems that have the program TN3270, such as our own Unix system on Sphinx.

The FTP protocol provides for file transfer between network hosts, as well as directory listings, appending and deleting of files, and data transformation.

The SMTP protocol provides for the transfer of electronic messages between network hosts.

Our current implementation schedule projects general availability by the end of Fall Quarter.
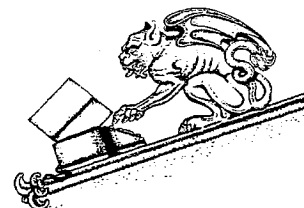
SAS/C Compiler Now on MVS

— *Jim Lichtenstein*

The Center has installed a compiler for the C programming language on the MVS operating system. It is the Lattice C Native Compiler from the SAS Institute Inc.

There are two manuals for the SAS/C system:

Technical Report: C-101
> Reference for the Lattice C
> Native Compiler (May 1986)
> as modifed by SAS Institute Inc.
> for IBM 370 Systems

Technical Report: C-102
> SAS/C Compiler
> Supplement for Release 3.00

These manuals may be ordered from SAS Inc.

This compiler is a portable implementation of the C language and attempts to maintain compatibility with the currently reigning standards for the language as specified or adumbrated in:

Kernighan & Ritchie   *The C Programming Language*
Harbison & Steele   *C — A Reference Manual*
Lattice Portable Library
UNIX Programmer's Manual
UNIX System V Interface Definition
ANSI DRAFT —
> Preliminary Draft-Proposed ANSI C Standard
> > — Document Number X3J11/85-100

These books should be available in respectable bookstores.

There are significant differences between the way in which C expects to handle input/output and IBM

standards for I/O. Thus, it is important to look over the technical reports before trying any sophisticated programming.

Six cataloged procedures have been installed to ease the way for batch programmers. They are:

LC370C	to Compile
LC370CL	to Compile & Link
LC370CLG	to Compile, Link & execute (Go)
LC370L	to Link
LC370LG	to Link & execute (Go)
LC370D	to run the Disassembler

In the above procedure names, *LC370* stands for Lattice C for 370 systems.

TSO support has also been installed. There are two scenarios for running SAS/C under TSO:

SCENARIO 1:
— You keep your C programs in a PDS called SAMPLES.C .
— One of the programs is SAMPLES.C(ECHO) .
— Proceed as follows:

To Compile:

   LC370 SAMPLES(ECHO)
     Creates: *SAMPLES.OBJ(ECHO)*
                     - the object PDS, member ECHO
               SAMPLES.LIST
                     - the compiler listing

To Link:

   CLK370 SAMPLES(ECHO)
     Creates: *SAMPLES.LOAD(ECHO)*
                     - the loadlib, member ECHO

To Disassemble the object:

   OMD370 SAMPLES(ECHO)
                     - after the Compile
     <u>or:</u>

   LC370 SAMPLES(ECHO) OMD
                     - with the Compile

Both of these leave the disassembly listing in
   SAMPLES.LIST

To Execute:

```
ALLOC FI(CPLIB) DA(SAMPLES.LOAD)
                        - Allocates the loadlib
C ECHO command-line-arguments
                        - Executes the program
```

SCENARIO 2:
— You keep your C programs in separate
    sequential files.
— One of your files is called ECHO.C .
— Proceed as follows:

To Compile, Link & Execute:

```
LC370 ECHO            - Creates ECHO.OBJ &
                       ECHO.LIST
CLK370 ECHO          - Creates
                       ECHO.LOAD(TEMPNAME)
ALLOC FI(CPLIB) DA(ECHO.LOAD)
                     - Allocates loadlib
C TEMPNAME command-line-arguments
                     - Executes program ECHO
       or:

LC370 ECHO OBJECT(mylib(name))
                     - Creates mylib.OBJ(name) &
                       ECHO.LIST
CLK370 mylib(name)   - Creates mylib.LOAD(name)

ALLOC FI(CPLIB) DA(mylib.LOAD)
                     - Allocates loadlib
C name command-line-arguments
                     - Executes program "name"
       or:

LC370 ECHO            - Creates ECHO.OBJ &
                       ECHO.LIST
CLK370 ECHO LOAD(mylib(name))
                     - Creates mylib.LOAD(name)
ALLOC FI(CPLIB) DA(mylib.LOAD)
                     - Allocates loadlib
C name command-line-arguments
                     - Executes program "name"
```
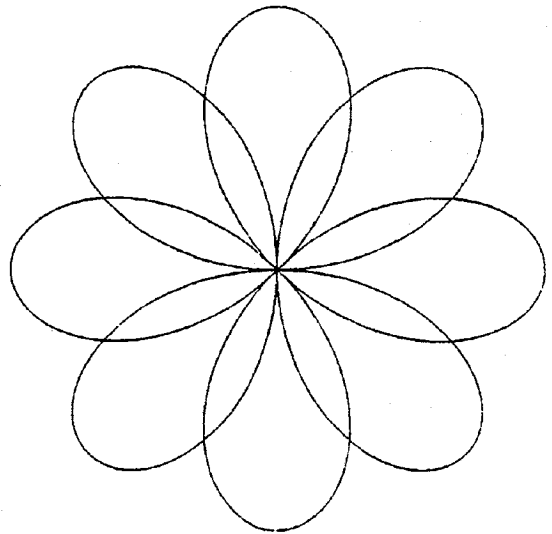
TOPS-20

Fortran 10 Now in Production

— Joyce Weil

Fortran 10 is now the production version of Fortran on DECsystem-20 Chip. Fortran 10 is a development release of the compiler, and the first version which implements the full Fortran-77 standard. Major new features include support of arrays, character scalars and COMMON blocks larger than 256K words, multiple sections of code, and unlabelled industry-standard magnetic tape. Two new compiler switches:

/EXTEND	*— to support multiple code sections*
/FLAG	*— a compatibility flagger*

have been added.

Values in DATA statements may be expressed as Octal or Hexadecimal constants. A new INQUIRE statement returns run-time information about files. An IMPLICIT NONE statement has also been added. The INCLUDE statement has two new options and may be nested. The PARAMETER statement may contain expressions involving multiplication, division and exponentiation of constants of type COMPLEX. Comments may be interspersed with continuation lines. FORDDT has a PAUSE ON ERROR command which causes a trap to FORDDT whenever a run-time error is encountered.

A number of bit-handling routines have been added. These are: IAND, IOR, IEOR, NOT, ISHFT, ISHFTC, IBITS, IBSET, IBCLR, BTEST and the subroutine MVBITS.

Character data can be handled through the functions ICHAR, CHAR, LEN, INDEX and the comparatives LGE, LGT, LLE and LLT.

The structured IF... THEN, ELSE, ELSE IF... THEN, and END IF are all implemented, as are DO... WHILE and END DO.

For more details, see MANUALS:FORTRAN10 and the TOPS-10/20 Fortran Language Manual — AA-N383B-TK.

TELL-A-GRAF 6.0 Now Available

— Dorothy Raden

TELL-A-GRAF Version 6.0 is now available for test on the DECsystem-20. TELL-A-GRAF is an easy-to-use graphics system for producing curve, bar, pie and text plots on a variety of devices. The new version of TELL-A-GRAF (TAG) supports a variety of new devices including the newer series of Hewlett-Packard and Tektronix terminals and plotters. Also new in the list of supported devices are the Calcomp Samurai, the Hewlett-Packard, the Magi, and the Matrix QCR film recorders.

The color support features have been greatly enhanced in the new version. There are now an almost unlimited number of colors for devices, such as film recorders, that have extensive color support. Some of the new color keywords available in TAG 6.0 are: AVOCADO, BEIGE, BRICK, CHARCOAL, GOLD, KHAKI, LAVENDER, OLIVE, PEACH, ROSE, TANGERINE and VIOLET. In addition, there are now saturation keywords such as VIVID, MELLOW and PALE, and intensity keywords such as BRILLIANT, BRIGHT, DULL, and DARK.

There are also combination saturation-and-intensity words such as LIGHT and DUSTY. Note that if you specify a color not available on your device, TAG will choose a color for you.

There are many other new features and routines in TAG 6.0. Some of these are: interpolation routines RSPLINE and TREND, curve spiking, new symbol types, control over number of legend columns, and multiple lines for x/y axis labels. For text variables such as messages, string subsets may be changed by the new CHANGE command. Fonts can now be drawn more quickly with the QUICK FONT command at the Generate level. For those of you doing log plots where the axis last-point does not fall at a complete cycle division, that minor-tick axis point will now be labelled, as required in many journals. Another useful new feature of TAG 6.0 is the ability to take a plot stored as a metafile (POPfile) and use that file as a symbol, thereby allowing easily customized symbols.

TAG 6.0 has new layout commands which will produce different graphic defaults (page size, title/label placement, text size, etc.) depending on destination device or function of the graph. The new customized page layouts are:

    VERTICAL REPORT
    HORIZONTAL REPORT
    SLIDE
    VIEWGRAPH
    CRT
    PC

There are also SUBLAYOUT layouts for producing smaller-than-full-sized plots on report-sized pages and to facilitate positioning of multiple plots on a page. A new global command is now available that will improve the appearance of plotter output:

 PRI/SEC DEVICE ONE WAY SHADING

For improved viewing on small screens, TAG 6.0 will let you force the plot to fill the screen, when you are in a TAG post processor, by specifying:

 MODIFY = plot # (HWSCAL = SCREEN)

There are some new file commands in version 6.0 that can be issued at the global level, such as:

 SAVE FILE NAME 'easy.dat'

This feature eliminates the need to rename the TAGSAV.DAT file before re-using TAG. Also, sub-plots can now be easily removed with the command:

 REMOVE 'badsubplot'

Note that you will no longer be prompted for the Calcomp file name, since Calcomp plot files will be written by default to FOR40.DAT whenever a GO/SEND is issued for drawing to the Calcomp 1051 device. If you wish to specify a file name, just type in:

 PRI/SEC DEVICE FILE NAME 'any.plt'

at the Generate level.

There are many other new features of TAG in version 6.0 which can be found in the new TAG manuals. The manuals have not yet arrived, however, so watch for system messages on their availability.

Finally, many annoying bugs have been cleared up. Did you ever get mysterious question marks ("???") within your division labels when you had many divisions? No more.

To use the new version of TAG, type in:

 TEST

on the DECsystem-20 once you have the @ prompt, and then type in:

 TAG60

Watch for system messages concerning the availability of Matrix QCR film-recorder slide output at the hospital's Audio Visual Department (BH S30). The AV department will make MELLOW YELLOW a reality.

Further information will be available from the *man* pages for the various programs when the release is made available.

PYRAMID/UNIX

OSx 4.0 to be in Production

— *Ron Rusnak*

The Center will change releases of the OSx operating system on Pyramid Sphinx at the beginning of Fall Quarter. OSx 4.0 is a major release which includes an important new feature: *AT&T UNIX Documenter's Workbench Software Release 2.0.* Changes have been made to improve the *C* and *Pascal* compilers. A new communication utility *ntalk* has been added.

In OSx 4.0, the following utilities have been enhanced:

adb	*brc*
chmod	*indent*
lint	*login*
pr	*quota*
rcs	*sum*
tplot	

In addition, performance improvements of 5% to 20% have been made in:

diff
grep
sed
sort
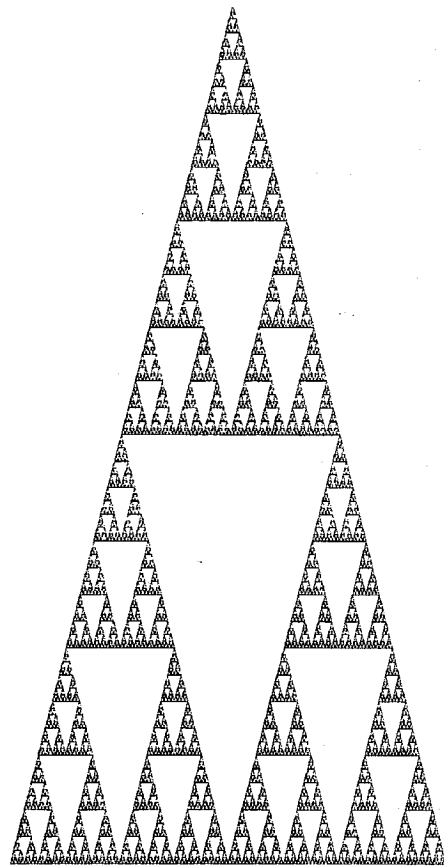
MICROCOMPUTING

MacWorld Expo

— Victoria Crawford & Jim Danbury

Over 30,000 people attended the MacWorld Expo held in Boston from August 11th through 13th. The MacWorld Expo demonstrated the versatility of Apple's new computers — the Macintosh SE and Macintosh II — as more third-party products become available for them. The show was open to the public, and many of the 700 exhibitors used the event as a platform to announce new products ranging from add-in boards to database software to huge color monitors. But even as these products point to more powerful uses of Macintosh's more advanced hardware, Apple announced revolutionary new components to its basic system software that could have far-reaching effects on the way software is written and used. Although their general availability is currently unknown, the new pieces of system software announced by Apple are to be bundled with all Mac systems sometime this autumn. These new components are HyperCard, MultiFinder, and Apple File Exchange.

HyperCard — This is the most important new product announced at the Expo. It cannot easily be placed in current software categories. It takes its name from the buzzword "hypertext" and Xerox PARC's "Notecards" software. HyperCard uses the metaphor of notecards as a medium for organizing information. These electronic notecards can be arranged in any way the user likes — ways that needn't be hierarchical or even sequential. Informa-

tion stored on these "cards" can be linked associatively to different kinds of information stored on other cards or even to entire groups of cards (called "stacks"). These links are handled through an object-oriented extendable programming language called HyperTalk, which is functionally sophisticated, but simple to use. Even people with no programming experience can create HyperCard programs by borrowing HyperTalk objects from existing HyperCard applications (a.k.a. "stackware"). Further, other programs can be launched from HyperCard, allowing it to work as a "shell." Finally, combined with CD ROM or videodisc technology, HyperCard will allow people to explore vast quantities of information, whether it is stored as text, graphics, or sound. A Macintosh running Hyper-Card might best be decribed as a vehicle for managing and delivering information.

MultiFinder — The second new component of Macintosh system software introduced at the Expo is MultiFinder, which allows the Mac user limited "multi-tasking," or the ability to run more than one application at a time. Thus, MultiFinder lets the Macintosh user print a document in the "background" while he works on an application independent of the printing. Further, specially written applications can be run in the background. This is Apple's first implementation of a multi-tasking operating system. To be used effectively, MultiFinder requires a minimum of one megabyte of system memory (RAM). As more memory is made available, more tasks can be run simultaneously. MultiFinder will offer the convenience of the Switcher software — which will no longer be developed — with few of its drawbacks.

Apple File Exchange & Inter-System Links — Product development was evident at the MacWorld Expo in the further integration of Macintoshes with other systems, especially DOS-based machines, Unix systems, and VAX minicomputers. The transfer of data between these systems will be improved with Apple's new Apple File Exchange software and its EtherTalk connection to Ethernet networks. Networking cards, gateways, and utilities for sharing information across networks are available from a number of vendors, including Centram Systems, Dayna Communications, and Kinetics.

New Hardware — Also on display at the Expo were new hardware tools for image processing, including a FAX modem from Apple and multi-bit image scanners from other vendors. Other graphic products of interest are those that take advantage of the Macintosh's new open architecture. Among the first to do this are producers of monitors and graphic boards. Macintosh II monitors from several third-party vendors displayed stunning pictures in 256 colors or shades of gray on large screens. New software applications are already making use of these new hardware peripherals. For example, Letraset's ImageStudio allows gray-scale manipulation of scanned images which can be exported to desktop publishing applications. The performance of these new hardware and software graphics tools can be improved by other add-in cards such as accelerator boards with faster processors and memory boards using one megabit RAM chips.

Other New Software — New kinds of software applications were also on display. Powerful word processors were seen to combine advanced text-processing with desktop publishing features. More database products for the Macintosh were shown than ever before, and some of the more sophisticated relational packages displayed, such as 4th Dimension, allow for unprecedented amounts of user control over the structure of the database, as well as over the manipulation of the data it holds. Although these new products will fill current software niches, Apple's introduction of HyperCard will create many new niches. If the flurry of new products that followed the introduction of Apple's new computers is any indication, we can expect a similar proliferation of new software to follow the introduction of HyperCard.
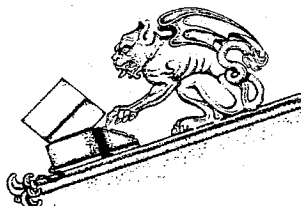
D & D Lab:
The Scoop on New Products

— *Marc Jacobson*

The following new hardware and software now reside in the Microcomputer Demonstration and Development Laboratory, at 1155 East 60th St. To make an appointment to have equipment demonstrated, or to examine software yourself, call 702-7178. This includes these new additions or any other software or hardware listed in MICLAB on DECsystem-20 Chip.

New Hardware:

A **Macintosh II** has been installed in the Lab for demonstration. It has a 40-megabyte internal hard disk, a monochrome monitor, and an extended keyboard.

In addition, we have set up a **Hewlett-Packard QuietJet Plus** printer with the **Vectra** PC/AT-compatible computer. It prints in both near-letter-quality (NLQ) and draft modes, and as the name implies, it is extremely quiet. It has a wide carriage for 132-column jobs, and prints at speeds up to 192 c.p.s. in 12-c.p.i. draft mode, 48 c.p.s. in 12-c.p.i. NLQ mode. It is graphics capable, and has both serial and parallel (Centronics) ports.

For the Macintosh world, the Lab has acquired a digitizing tablet called **MacTablet by Summagraphics**. It substitutes for the mouse, but can work in conjunction with it. Such a tablet makes it easier to draw accurately, as an image can be traced precisely with the tablet's pen, much more easily than with a mouse.

New Software for IBM PC-compatibles:

Lotus Manuscript, v. 1: a powerful word processor from Lotus which has many advanced text-editing features. Among these is a page-preview function which displays a document on screen as it will appear when printed, duplicating mathematical formulae, various fonts, etc. There are two editing modes: Structured and Unstructured. The latter seems similar to a conventional word processor, while the structured environment makes use of "blocks" of text within sections that are rigidly controlled in a hierarchy by an outline created and manipulated by the user. Manuscript can bring in graphic files (.PIC) which have been created by Lotus 1-2-3, Lotus Freelance, and ThinkTank.

Media Master, v. 4.1/2.1: a program used for reading data from floppy disks which have been formatted under operating systems other than DOS. For example, Media Master is capable of reading disks which have been formatted under CP/M on a Kaypro. It can read the format of a large number of foreign microcomputers/operating systems.

PageMaker, v. 1.0 by Aldus: a WYSIWYG (What-You-See-Is-What-You-Get) page-layout program which is a "port" from the Macintosh world to IBM-compatibles.

Ventura Publishing Series by Xerox, v. 1.1: another WYSIWYG professional page-layout system which can combine text from a wide range of wordprocessors with graphics from AutoCAD, Lotus 1-2-3, Lotus Freelance, GEM Draw, PC Paintbrush, etc. Graphics software for some Macintosh programs can be incorporated as well. Files can be from General Parametric's Video Show format, AutoCAD DXF format, HPGL, CGM or encapsulated PostScript.

New Software for the Macintosh:

Bulk Mailer by Satori: software designed for mail list management. It has coding and sorting routines, global editing, Zip + 4 options, and more.

Cricket Graph, v. 1.0: a product used to enter and graph data on Macintosh with relative ease and flexibility, in several modes of display, such as bar graph, pie chart, scattergram, etc. It also supports some Hewlett-Packard color plotters.

Double Helix by Odesta: a version of Helix (a powerful database manager) that supports picture fields, subforms (which allow a user to embed one form within another), a revised Template, an Auto-Save feature, and other additions. Users should note that Double Helix is "not directly compatible with Collections made using other versions of Helix."

Fedit, v. 1.07 by MacMaster Systems: a file and disk edit utility intended for those advanced Macintosh users needing to "look" at or modify data files, programs, or a disk directory, or to repair sectors on a damaged disk.

Fontastic Plus by Altsys Corp: a bitmap font editor for the Macintosh.

Graphics Works, v. 1.1 by MacroMind: a powerful graphics tool which is composed of "a page layout program, a paint program, a text editor and a template library." It also has speech balloons.

MacDraft by Innovative Designs, v. 001M: a drafting tool designed for creating and editing floor plans, organizational charts and related two-dimensional precision line-art drawings on the Macintosh. Its features include a continuous drawing mode, 16 different measurement scales, a zoom in/out capability, circles by radius or diameter, object rotation in 1-degree increments, and importability from MacPaint and MacDraw.

MacZap, v. 4.54 by MicroAnalyst: many things having to do with disk repair, editing, and copying. Its most useful feature is its file/disk recovery program, which can rescue files from damaged floppies as well as many different hard drives.

MeasureUP, v. 2.0 by Logic Extension Resources: an educational testing tool which aids in creating tests by combining word processing, graphics, and database capabilities.

Music Works, v. 1.1 by MacroMind: a music composition package which differs from Professional Composer (see below) in that Professional Composer is designed to create scores for use by

musicians and instruments other than the Macintosh. It assumes that the user knows a great deal about musical composition. MusicWorks has several features which facilitate sound creation and playback; it is a more self-contained environment, although there is a lot of crossover between the two.

PowerMath by Industrial Computations: software that "solves problems from the most simple arithmetic and algebra to the complicated Calculus expressions. All you do is type the problem and select Evaluate." PowerMath claims to solve simultaneous linear and non-linear equations, compute indefinite and definite integrals, solve differential Calculus problems, solve matrix algebra problems, simplify expressions, solve Taylor series, compute factorials, plot expressions, and more.

Professional Composer, v. 2.0 by Mark of the Unicorn: an on-screen composition/play-back program. Professional Composer is a remarkable editor for music scores; a point-and-click interface allows one to place notes, rests, measure numbers, tempo markings, accelerandos, etc. in a composition of one's own. This composition can be played back, with limitations, by the Macintosh, using a range of instruments.

StatWorks by Cricket Software, v. 1.2: a straightforward statistics package with graphics output for the Macintosh.

Systat, v. 3.0: another statistics package for the Macintosh. Although the Lab does not have the latest version for the Macintosh — which is said to have a new interface and extensive graphics — the version in the Lab is powerful, handling up to 200 variables per case.

Turbo Pascal by Borland Intl.: the fastest, hottest Pascal compiler around.

VideoWorks by Hayden Software: an animation composition package. VideoWorks gives you two ways to animate the images you have created: by real-time recording of the mouse movement; and through frame-by-frame shots of the images as they move or change. Twenty-four different objects can be on the screen at the same time, and all of them can be animated. There is a graphics tool for creating original artwork. Color for the Macintosh II has also been implemented.

WriteNow by T/Maker: a full-fledged word-processor along the lines of MacWrite. WriteNow can "do footnotes" (which can only appear at the bottom of the page), and it has a spelling checker. It is a reasonable alternative to Microsoft's Word, but it has its own set of problems.

Please consult MICLAB on DECsystem-20 Chip at any time for a complete listing of software and hardware available in the Lab (type "MICLAB" at the "@" prompt). ·

DEPARTMENTS

People

People who have joined the Center:

Marty Billingsley has joined Applications Systems as a Junior Programmer/Analyst II. **James Danbury** has joined the Center as a Junior Staff Analyst II in Information Technologies and New Services. **Geraldine Mitchell** is a Programmer/Analyst with Administrative Information Services.

People who held summer positions in the Center:

Joseph Bates, Junior Programmer/Analyst I, in Applications Systems; **Samuel Gassel**, Junior Programmer/Analyst I, in Applications Systems; **Steve Upp**, Junior Programmer I, in the Microcomputer Distribution Center; **Jeffrey Schank**, Junior Staff Analyst I, in Information Technologies and New Services.

Transfers/Promotions within the Center:

Charles Blair has been promoted from Junior Programmer/Analyst I to Junior Programmer/Analyst II in Library Systems. **Gary Buchholz** has been promoted from Systems Programmer to Senior Systems Programmer in Operating Systems and Hardware Planning. **Laura Cuzzillo** has transferred to Administrative Information Services as a Staff Analyst. **Christophe deGrazia** has been promoted from Documentation Specialist I to Documentation Specialist II in Instruction and Documentation Ser-

vices. **Eric Nelson** was promoted from Junior Programmer/Analyst II to Programmer/Analyst in Applications Systems. **Vincent Scamurra** was promoted from Junior Systems Programmer I to Junior Systems Programmer II. **Ellen Seebacher** has become a Documentation Specialist I in Instruction and Documentation Services. **Ronald Thielen** was promoted from Lead Systems Programmer to Project Manager in Operating Systems and Hardware Planning. **Joyce Weil** was promoted from Programmer/Analyst to Senior Programmer in Applications Systems. **Clark Wilson** was promoted from Lead Programmer/Analyst to Project Manager in Administrative Information Services. **Rebecca Wilson**, Junior Programmer/Analyst II, has transferred to Business Services.

People who have left the Center:

Steve Nesnidal, Clerk Messenger in Business Services, has graduated from the College and gone to Rush Medical School to study medicine.

Open Positions at the Center

The following full-time positions were open at the Computation Center as of September 15. Detailed descriptions of the positions may be obtained from the Center's receptionist or from the person listed with each position. The University is an affirmative action/equal opportunity employer.

Senior Systems Programmer — Responsible for systems program development, installation, maintenance, performance analysis and tuning. Requirements include from two to five years experience in one or more of the following operating systems: MVS, TOPS-20, Unix. *Michael E. Willey, 702-76l7.*

Senior Programmer/Analyst — Responsible for installation and maintenance of applications programs on the operating systems above. Requirements include superior programming skills and knowledge of minicomputers and microcomputers. *Donald H. Goldhamer, 702-7166.*

Documentation

New Documentation Available

08/18/87 **R102** *Treatise*
"The Treatise Manual" (R102 or TREATISE in Doclist) has been updated to clarify procedures recommended for producing copies of a dissertation formatted using the Treatise text formatter.

07/23/87 **4379** *Converting to the 3380s*
This memo identifies procedures and tools for converting existing JCL for the new IBM 3380 disks. It also discusses methods for more efficiently converting files from the old STC 8650 disks to the newer devices.

06/29/87 **4349** *Job Reporting System*
Memo 4349 has been extensively updated to represent the new Job Detail Reporting system accessible through the public macro Detail.

06/22/87 **4239** *MVGDG*
Memo 4239 has been updated to reflect the replacement of MVGDG by the cataloged procedure UPDGDG. The memo has been accordingly re-titled "UPDGDG:

Utility to Catalog a Multi-volume Generation of a Generation Data Group."

06/05/87 **2006** *An MM Primer*
Memo 2006 (NOTES:MM on Chip) has been updated to reflect current Center policies and procedures.

05/29/87 **R187E** *SuperWylbur V 3.7 Formatting*
R187E is the manual which describes SuperWylbur's version 3.7 text formatting capabilities. Specific changes are documented in the HELP files under V37NEW or V37BUGS.

05/29/87 **R187C** *SuperWylbur RJE 3.7*
This is the Remote Job Entry manual for SuperWylbur version 3.7. It describes the 23 commands for submitting, monitoring, and retrieving batch jobs on MVS. The text has been adjusted to reflect local U of C modifications.

Recently Updated Documentation

07/01/87 **4170** *Rates: Internal Academic*

07/01/87 **4169** *Rates: External Academic*

07/01/87 **4168** *Rates: Ext. Non-Academic*

06/11/87 **4328** *Printers*

06/10/87 **4364** *Using The Impact Printers*

05/21/87 **4305** *Advanced SuperWylbur Features*

05/21/87 **4310** *Intro to SuperWylbur*

New in the MVS Notice File

09/03/87 **DISK8** *WORK02 restricted to temporary datasets*

09/02/87 **NEWS34** *Calendar for migration of PUBLIC packs to 3380s*

08/04/87 **NEWS33** *IMPORTANT*** News about the move to 3380s*

07/23/87 **FORT10** *Errors using QLOG/QLOG10*

07/22/87 **TAPE14** *New tape assignment numbers*

06/23/87 **MVS5** *MVGDG utility replaced by UPDGDG procedure*

06/22/87 **ACCT7** *DETAIL Macro & Program to be replaced*

05/29/87 **PLI3** *Problems calling Syncsort*

New in the DEC Notice File

07/22/87 **TAPE6** *New Tape Names*

07/01/87 **SVC5** *Advice Desk Information*

07/01/87 **DEC1** *Hints on unlocking frozen keyboards*

06/22/87 **ACCT1** *DETAIL macro & program to be replaced*

Index of Center Newsletters

The following index covers the last eleven issues of the *Computation Center Newsletter*, from the February 1985 issue through Summer 1987. Within this period, the *Newsletter* changed from a monthly to a quarterly publication. As a result, "Feb'85" refers to February 1985, while all of the other abbreviations refer to seasons: "W" - Winter, "F" - Fall, "Su" - Summer, "Sp" - Spring.

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860 and the DEC-20, Chip.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization May 1987 - July 1987

Service Provided	Amdahl 5860/MVS May 1987	Amdahl 5860/MVS June 1987	Amdahl 5860/MVS July 1987
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs non-setup jobs tape setup jobs	2:38 1:41 16:41	2:34 1:27 15:42	2:26 1:32 13:46
Total CPU-hours used	233 hrs 48 min	247 hrs 30 min	214 hrs 0 min
SuperWylbur sessions CPU hours connect hours average session average CPU/session	20,022 10 hrs 47 min 14,273 43 min 1.94 sec	18,578 10 hrs 33 min 13,358 43 min 2.04 sec	17,715 10 hrs 28 min 13,026 44 min 2.13 sec
TSO sessions CPU hours connect hours average session average CPU/session	4,028 6 hrs 33 min 2,066 31 min 5.86 sec	4,368 9 hrs 1 min 2,308 32 min 7.43 sec	4,401 8 hrs 29 min 2,278 31 min 6.94 sec
Jobs submitted Steps executed	56,896 110,486	54,898 107,656	55,619 110,309

* Time (minutes:seconds) from job submission until time it can be called to a terminal, from 10 a.m. until 5 p.m., Mon.-Fri. at normal priority (85% of the jobs are completed at or under the time shown).

The reported connect time does not include Model 204 or CICS.

Top Twenty MVS Programs May 1987 - July 1987

Program	Description	Percent	Count
UCFLBL20	Filebol	9.26	34,186
SASLPA	SAS	8.40	31,041
WYLLIST	SuperWylbur list offline	6.33	23,368
IEBGENER	IBM file handling utility	4.95	18,268
SORT	SyncSort	4.74	17,521
IEFBR14	IBM utility - null step	3.42	12,646
IDCAMS	VSAM utility for catalog operations	3.41	12,608
SUCCESS	Operating Services utility	2.89	10,682
FAIL	Operating Services utility	2.87	10,595
IBMDEC	IBM/DEC link utility	2.78	10,249
IEWL	Linkage editor	2.62	9,671
MARKYBOL	Systems utility	2.25	8,297
BATCH204	Model 204 run in batch	2.15	7,942
SPSSX	SPSS Version X	1.87	6,901
MAILXBM	Bitnet mail through SuperWylbur	1.46	5,383
IKFCBLOO	VS Cobol version 2.4	1.14	4,194
MVGDG	Multi-volume tape GDG cycler	1.13	4,191
PGM = *.DD	User defined routines	1.00	3,708
UOCVTOC	List volume table of contents	0.98	3,617
COMPUSET	Xerox text composing program	0.86	3,180

CHIP - DECsystem-2060 Utilization May 1987 - July 1987

Account Period	May 1987		June 1987		July 1987	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	101.5	5579	99.4	5815	93.2	4773
EVENING	38.8	1104	38.9	895	36.8	571
OVERNIGHT	86.2	1075	89.6	1110	82.1	648
TOTAL	226.5	7758	227.9	7820	212.1	5992

Top Twenty Chip Programs May 1987 - July 1987

Program	Description	Percent	Count
OPR	Operator functions	8.64	23,990
MM	Electronic Mail Manager	8.47	23,514
EXEC	TOPS-20 command processor	4.95	13,739
PTYCON	Pseudo-terminal controller	4.76	13,209
SYSDPY	Operator interface with job queues	4.71	13,084
WINDOW	Full screen PTYCON	4.70	13,041
WATCH	Generates these statistics	4.70	13,040
SYSJOB	System job controller	4.70	13,038
IBMSPL	MVS link daemon	4.70	13,038
RWHOD	Lists users on ethernet hosts	4.70	13,037
MMAILR	Network mail daemon	4.70	13,037
NETSRV	Supports ethernet network functions	4.70	13,033
USAGE	Utility to collect program use data	4.69	13,022
BITNET	Off-campus electronic mail network	4.62	12,829
1022	Database system	3.47	9,624
MUSE	Full screen editor	3.41	9,473
EMACS	Full screen editor	2.16	6,003
BATCON	Batch Controller	1.99	5,518
DEMAND	Data management system	1.93	5,368
MINITA	Interactive statistical program	1.41	3,901

General Information

Computation Center Administration

Acting Director of the Computation Center   John E. Iannantuoni   702-7616

Associate Director
Operations and Technical Services   John E. Iannantuoni   702-7616

Assistant Directors

Instruction and Research Information Services	Harold C. Bloom	702-7155
Information Technologies and New Services	George R. Bateman	702-7174
Finance and Administration	Peter B. Hayward	702-8671
Administrative Information Services	David E. Trevvett	702-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	702-7151
Microcomputer Distribution Center	1307 E. 60th St., Rear Entrance	702-6086
Multi-media Classroom	Harper 406	702-7153
Usite Terminal Cluster	Wieboldt 310	702-7894

Computer Communications Information

Phones	300 baud	1200 baud	2400 baud	4800 baud	9600 baud
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	300 baud	1200 baud	2400 baud	4800 baud	9600 baud	telenet
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	mvs24/vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20	chip	chip	chip	chip	chip	chiptn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	General address form	Example
Amdahl 5860 (MVS)	logon-id@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	username@chip.uchicago	staff.hal@chip.uchicago
Pyramid 90x (Sphinx)	person-id@sphinx.uchicago	halb@sphinx.uchicago

Telenet dial-in information

	Nearest phone number	Network address
	800-336-0437 most states	312436 (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)
		312437 (2400 baud — DEC only)

Quick Reference Phone Directory

On January 1, 1987, all **962** exchanges became **702**.

Information
General 702-7151
Machine status 702-7626

Accounts
Billing information & records 702-7158
Opening class accounts 702-7159
Opening PCA and regular accounts ... 702-7158
Refunds 702-7624

Advice and help
Applications software 702-7624
    Reporting problems
    Suggestions & complaints
Office support systems 702-7174
    Microcomputers
    Terminals
    Word processors

Computer supplies & tapes 702-7159

Custom services
Microcomputer custom services 702-7453
Printing 702-6081
Programming 702-7166

Data entry services 702-7604

Dataset recovery
PCA accounts 702-7159
Other accounts 702-7621

Documentation 702-7452

Magnetic tape services 702-7614

Microcomputers
Appointments for demonstrations 702-7178
Consultation on equipment 702-7174
Custom technical services 702-7453
Purchase of microcomputers 702-6086
Purchase of micro service contracts ... 702-6086

New software requests 702-7166

Production jobs & special handling .. 702-7602

Purchases
Computer supplies & tapes 702-7159
Microcomputers 702-6086
Microcomputer service contracts 702-6086
Used equipment 702-7615

Repairs
Macintosh microcomputers 702-7663
Terminals 702-7663

Subscriptions to the Newsletter 702-7159

Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637

Mailing List Request

Please check the appropriate response, enter any necessary information, and mail this entire page to:

**Newsletter Subscriptions
University of Chicago
Computation Center
1155 E. 60th Street
Chicago, IL 60637**

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
_____

City
_____

State   Zip
_____

The University of Chicago
Computation Center
NEWSLETTER

LASR
1 Harris

Research Institutes
1 AppleTalk Interface
3 Apollo
1 Elxsi 6400
1 Harris 1200
7 SUN Workstation
1 VAX 780

Searle
1 Celerity 1200
1 MicroVAX II
1 PDP-11

Hinds
1 AppleTalk Interface
2 Sun 3/160
1 VAX 750
1 SG Iris 2500 Turbo

Ryerson-Eckhart
1 AppleTalk Interface
1 Pyramid 90x
1 Ridge-32
25 SUN Workstation
1 VAX 750

Jones

Cummings
1 VAX 780

Walker
1 DEC System 2060
1 VAX 8600

Abbott
1 VAX 750

Classics
2 Sun Workstation

Woodlawn

59th St

U of C
Campus
ETHERNET

Computation Center
1 AppleTalk Interface
1 DEC System 2060
1 Pyramid 90x
1 Amdahl 5860

Winter 1988 **Edited By Christophe deGrazia** **Vol. XXIII, No. 4**

Table of Contents

GENERAL NEWS

Computation Center Schedule for the Holidays

The Computation Center will be closed as follows for Christmas and New Year's Day:

- *All offices in the 1155 building will be closed.*

- *The Computation Center computers will be shut down from midnight to midnight.*

- *Usite, Crerar, and Regenstein clusters will be closed.*

Computation Center services are scheduled as usual during the interim, except for the following changes:

Microcomputer Distribution Center:
12/24/87 and 12/31/87   *10:00 a.m. - 2:00 p.m.*

Usite Terminal Cluster:
12/24/87 and 12/31/87   *8:00 a.m. - 6:00 p.m.*

Usite Advice Desk
12/14/87 through 12/23/87   *10:00 a.m. - noon*
12/24/87 and 12/25/87   *closed*
12/26/87 through 12/30/87   *10:00 a.m. - noon*
12/31/87 and 1/1/88   *closed*

Board of Computing Activities and Services Forms Working Groups

— Hal Bloom

During the next several months, the Board of Computing Activities and Services will be studying and recommending courses of action for the University in three areas of contemporary computing. These areas are Networking, Public Computing, and Supercomputing. Each of these areas will be addressed by a working group consisting of board members, a Computation Center representative, and one or two other interested faculty or staff members. The recommendations of these groups will assist the University in formulating policies to guide its investment in a set of computing resources and services which will both be competitive with other universities and reflect the unique needs of our campus.

The Networking group will concentrate on issues involving the extension of existing campus network services to a wider audience, and the appropriate level of support that such an expanded network might require. It will also deal with connections between the campus network and external networks.

The working group for Public Computing will take on the topic of what set of computing resources and services should be provided to the general campus population via the campus network. Such services might include distributed laser printing, comprehensive electronic mail/directory services, applications servers, and support services.

The Supercomputing working group will explore the current and latent campus demand for supercomputer-related resources and services, and

the ways in which this demand can best be met.

At the time this article was written, the composition of the three working groups had not been finalized, but the chairmen of two of the groups and the Computation Center representatives of all three had been chosen. People with interests or concerns in the areas of the working groups are encouraged to contact either the chairman or the Center representative:

Working Group	Chairman	CC Representative
Networking	Michael O'Donnell	Hal Bloom
Public Computing	Eugene DeSombre	George Bateman
Super-computing		John Iannantuoni

MVS Now on Ethernet

— *Samuel Gassel*

The Computation Center's Amdahl 5860 computer has been connected to the campus Ethernet and is now available for network use as host UCHIMVS1. This hook-up completes the linking of Computation Center computers to the campus Ethernet. Further, many computers on campus now have direct links to each other through the Ethernet. As a result, a wide range of new services and network connections is now available to users of all Computation Center and many other campus computers.

In the past, the only link between UCHIMVS1 and the rest of campus was the unwieldy DEC-MVS link. Transmission was slow, and not reliable for many types of files. Users of the Computation Center's Unix machine, Sphinx, and of other campus computers could not send files directly to the Amdahl. Consequently, they could not conveniently take advantage of its superior processing capacity, greater disk space, and fast printers while working in their own familiar environments.

The connection of the Amdahl 5860 computer to the campus Ethernet means an end to such restrictions.

Current Capabilities:

In particular, the connection has immediate impact in the areas of file transfer and remote logons.

File Transfer — File transfer to and from UCHIMVS1 is now possible via FTP — the standard network file transfer program. Binary and text transfers, with or without ASCII-to-EBCDIC translation, are possible. For the time being it is necessary to enter the command:

QUOTE SITE VOL(STORnn)

where "nn" is a two-digit number between 01 and 07, before trying to transfer a file to an MVS disk pack. Note that a SuperWylbur EDIT format dataset should be converted to CARD image format on MVS, before FTP is used to transfer the dataset. For information on CARD format datasets, see the *SuperWylbur Text Editing* manual (R187B in Doclist). Note also that — if *FTP*ing to MVS — *SEND*ing or *PUT*ing a file to MVS will replace an MVS dataset of the same name.

Remote Logons — It is now possible to logon to TSO on the Amdahl 5860 from other machines on campus using TELNET — the standard network remote-logon protocol. For a discussion of a few basic TSO commands that could be used through TELNET in place of corresponding SuperWylbur commands, see the article "An Introduction to TSO for SuperWylbur Users" later in this *Newsletter*. Additionally, on Sphinx, and on other Unix machines that have it, the program *tn3270* will allow access to full-screen editing in both SuperWylbur and TSO.

These procedures mean that you no longer have to end your current session on one computer system to work on the Amdahl's MVS system. However, you will be charged for connect time on both computers, if the originating computer charges you for connect time. Therefore, if you expect to be doing a lot of work on MVS, you might save money if you logon directly, as usual, through Gandalf.

The network address of the Amdahl is *uchimvs1.uchicago.edu*. This may be abbreviated as *uchimvs1* on most campus Ethernet machines. On DECsystem-20 Chip, however, the Amdahl should be addressed as *uchimvst* for FTP and TELNET. See "Using Ethernet to Access MVS from Chip" for the details of connecting to MVS from Chip, and "tn3270 — Full-Screen Access to MVS" for further information on accessing MVS from Sphinx and some other campus Unix systems. Both articles appear later in this *Newsletter*.

It is also possible to use FTP and TELNET to connect from TSO to other systems. However, the MVS versions of these programs are difficult, and not recommended for casual use.

Developments in Progress:

The Center is now making use of the new connections to develop improvements in some current applications. These include the electronic mail facilities. Watch the logon messages for notices on such developments.

Mail — By the end of Winter Quarter, users on all campus Ethernet systems will be able to use simpler addressing schemes to send mail, and will perhaps notice some general improvements in mail processing. Instead of having to send mail to *pppuuuu@uchimvs1.bitnet* — where *ppp* is the user's MVS project-id and *uuuu* is his or her user-id — senders will be able to address mail simply to *pppuuuu@uchimvs1*. Likewise, Amdahl users will no longer have to suffix *.uchicago* to other campus machine addresses. MVS users will soon notice that their mail will be sent more quickly, as access to the Internet makes direct machine-to-machine mail possible. Therefore, mail is less likely to be lost or damaged.

Possible Future Developments:

In addition to the applications available now, the Center is in the process of considering or developing many new applications that would take advantage of the new Ethernet connections. Such applications include:

Network Printing — Users on many campus computers would be able to access the speed and flexibility of the Center's Xerox 9790 printers. Line printer, XSET, Script, T$_E$X, and possibly even Troff output would be supported.

Remote Job Entry — Users would be able to prepare documents, programs, or data on networked machines and then submit their jobs to the Amdahl for processing. For example, a T$_E$X user could prepare a large document a piece at a time on Unix — by interactively checking each piece for syntax errors — and then submit the entire document to the Amdahl for final formatting and printing.

Network Disk and Tape Drive Sharing — Users would be able to access the great speed and capacity of the Center's new 3380 disk drives, as discussed in the Spring 1987 *Newsletter*.

Software and Data Servers — The Center will consider setting up archives of public domain software, such as Kermit, and making them easily searchable from networked systems.

Line-by-line SuperWylbur — The Center is currently investigating the possible implementation of line-by-line access to SuperWylbur from other computer systems on the campus Ethernet.
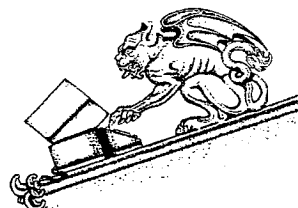
Public Domain Software

— Ernie Froemel

Public domain software consists of programs written by individuals and made available to the public by those individuals via networks. In most cases, the software is available free of charge. In other cases, the author asks anyone using the program to send a small payment. This latter set of software has been dubbed "Shareware", and the fees help defray development and documentation costs.

In all cases, public domain software is not guaranteed — you use it at your own risk. There have been cases where such software has destroyed files or caused hard-disk crashes. The only protection is communication. People who have had problems usually report it through the same mail networks from which they received the software.

The Computation Center has periodically loaded some public domain software for Macintoshes into the directory */usr/sun/mac/news_src/* on the Center's Unix system Sphinx. Although the Center has distributed the software in this directory among sub-directories for various categories, the Center does not guarantee any of the software. This directory is now quite full.

Starting at the end of January 1988, files in this directory will be moved to archive tapes and removed from disk if they have not been accessed for two months. This will allow useful software to remain readily available on disk. Less useful software will still be available for eighteen months, but from tape using the *arcrest* command. This weeding process will also make room for more recent network offerings.

Anyone with access to the Pyramid may read Usenet mail, which includes categories devoted to public domain software. News groups beginning with "comp.binaries." contain binary postings of programs for a variety of microcomputers. For example, Macintosh software may be found in "comp.binaries.mac". Source code is posted in groups beginning with "comp.sources". Macintosh source would be in "comp.sources.mac". Use the *rn* command to examine these postings. Documentation about downloading such software is being prepared and will be available through Doclist in the near future.

Various user groups also maintain public domain software and make it available for nominal fees — usually the cost of the diskette. Here is a short list of some local user groups:

— University of Chicago Macintosh Users Group, 288-5199 evenings. Membership in this group is free; however, a membership packet including their public domain software catalog, is $5.

— The Rest of Us, 871-5086. This is a Chicago-area Macintosh group that costs $40 per year for membership. Members have access to a 24-hour electronic bulletin board system and an extensive library of public domain software.

— The Association of Personal Computer Users, 932-4686. This group is only for business or technical users of IBM and compatible personal computers. Membership is $30 per year; and, members have access to an electronic bulletin board and a library of public domain software.

— South Side Kaypro People, 667-2075 or 684-0578. This group maintains libraries of both MS/DOS and CP/M software.
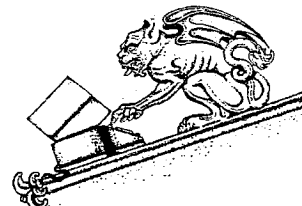
Appletalk/Ethernet Connection

— Beth Christy

Several FastPath gateways, marketed by Kinetics, Inc., are being installed on campus. The gateway provides a bridge between local Appletalk networks and the Ethernet. With the appropriate software, you can use the FastPath gateway to:

- *Telnet* from your Macintosh directly to one or more of the machines on the Ethernet;

- *FTP* files between your Macintosh and any machine on the Ethernet;

- print files on local LaserWriters from an Ethernet host;

- use an Ethernet host as a file server for your Appletalk network.

To *Telnet* to Ethernet hosts, you'll need appropriate software for your Macintosh. The National Center for Supercomputing Applications (NCSA) has developed a Telnet for the Macintosh. NCSA Telnet emulates a VT100, and can do limited emulation of a Tektronix 4010. There are some problems with it, however. You sometimes have to try several times before you're able to make a connection. Also, the VT100 emulation is not very compatible with Emacs on the DECsystem-20. But an advantage of NCSA Telnet over other terminal emulators is that you can have multiple open connections at once. So you can be logged-on to Chip, Sphinx and MVS TSO/E all at the same time, and switch between them with a click of the mouse.

Once you're logged-on via NCSA Telnet, you can then invoke FTP on the host to transfer files between the host and your Macintosh. A note of caution: There is no password protection in NCSA

Telnet. So whenever you can *FTP* to your Macintosh, anyone else on the Ethernet can too. To protect your Macintosh from unauthorized access once you have launched Telnet, select the *FTP Enable* item from the *File* menu to uncheck it. Then, when you want to *FTP* to your Macintosh, select it again to check it, make the FTP connection, and as soon as you're done in FTP, select it once more to uncheck it again.

Note: As of this writing, it is possible to turn off *FTP Enable* by default. By changing "ftp = yes" to "ftp = no" in the *Config.Tel* file which comes with the program, NCSA Telnet will not allow FTP connections to be made. However, the *FTP Enable* menu item will still be checked. So to allow *FTP*ing, you'll need to select the item twice — once to uncheck it, and once to check it again.

Ethernet hosts with the appropriate software can use a FastPath gateway to generate output on Appletalk printers. Software which can "speak" Appletalk is necessary in all cases, and — if the printer is a LaserWriter — software which can generate PostScript output is also needed.

Columbia University has developed the Columbia Appletalk Package (CAP), which implements Appletalk protocols on Berkeley Unix machines. This package can determine what printers are available on an Appletalk network, and can route output to any of them. CAP is currently installed on Sphinx and on some of the other Berkeley Unix machines on campus. As of this writing, there is still some problem in seeing printers on Appletalk sub-nets other than the one directly connected to the Fast-Path. It is hoped that — by the time you read this — the problem will have been resolved.

If you want to route output to Appletalk Laser-Writers, you'll need to generate PostScript on your host. Adobe Systems Incorporated markets a package called Transcript which runs on Unix systems (both Berkeley and System V), and generates Post-Script output from a variety of formats, including straight text, *troff* files, Tektronix 4014 files and Unix plot files. Transcript is installed on Sphinx and many other University machines. Some versions have a bug in the processing of Tek 4014 documents whereby only a blank page is output. A fix was developed here at the Center and is available

by sending mail to *unixstaff@sphinx*.

As a supplement to the CAP package, Columbia also provides an Apple-to-Unix File Server (AUFS). This is a demon that runs on Berkeley Unix machines — including Ultrix and Sun — and allows the use of part of a Unix machine's file structure as a file server for Macintoshes. This is desirable when you require a large amount of shared space, and is particularly desirable if you already have a tape drive attached to your host and want to have tape backups of your Macintosh files. In order to access the files from your Macintosh, you need to have Appleshare turned on in the Control Panel and the Appleshare CDEV in your system folder. You can then select Appleshare from the Chooser and use the Unix file server just as you would any other file server. Unfortunately, this means that you have to send a user-id and password to the Unix host. By default, this is your regular Unix logon-id and password. Since no encryption is done, and since it's relatively easy to watch the data being transmitted across Appletalk, this might pose a security problem for some sites. There is support for an alternative table of user-ids and passwords which could limit the type of access that might be compromised, but some passwords would still be transmitted in clear text.

The University has a site license for Transcript, which means that any University-owned Unix machine can obtain the package from the Computation Center. Both the CAP software (including AUFS) and NCSA Telnet are copyrighted but available free of charge. If you are interested in interfacing your Appletalk network to the Ethernet, contact Mike Willey at 702-7617.

MVS

Recovering SAS Datasets

— Ernie Froemel

As previously reported, SAS data libraries copied to tape from 3350 disks using IEHMOVE (MOVESTOR) or FDR cannot be restored to the new 3380 disks in the usual way. The following procedure should be used to request the recovery of SAS data libraries which were not moved using PROC COPY:

1. *Mark your tape for* READING *by project* SDU.

2. *Run TAPESCAN and have the output available for reference.*

3. *Phone Jim Lichtenstein (702-7165) with the tape volume, file name, and file position.*

As long as there is a modest number of requests, the Computation Center will recover these files for you. When the demand becomes too great to handle, a procedure allowing you to recover such files will be made available.

XICS Release 5.1 & Imposition Printing

— Charles Hodge

XICS Release 5.1 will be the default version of XICS by early Winter Quarter. The current default version of XICS, release 4.8, will continue to be accessible. All existing applications will work without modifications.

XICS 5.1 supports several Xerox 9790 printer features that were not accessible under earlier versions of XICS.

New XICS/Xset Features:

Expanded Font Memory — The font memory limit is now forty (40) fonts per job or 16386k bits. XICS 5.1 provides automatic access to the expanded memory as required.

Larger Fonts — Under release 5.1 of XICS/Xset a single copymark will load all symbols contained in the larger-size fonts. For example, the Xset copymarks *<18pt>* and *<24pt>* will load upper-case, lower-case, numeric and special symbols for the 18-point font and the 24-point font, respectively.

Imposition Printing — A new copymark has been installed in XICS/Xset to support booklet printing on the 9790 printers.

Imposition Printing:

Imposition Printing is the automatic placement of several logical pages on a single physical sheet of paper, such that the logical pages will appear in correct sequential order when the physical sheet is folded along the centerline.

The new copymark *<IMP1>* has been installed in the XICS/Xset macro. The *<IMP1>* copymark establishes an output environment for 5.5-inch by 8.5-inch folded-booklet imposition printing on the

9790 printers. Where possible, existing Xset features are integrated into that imposition environment.

Imposition Page Layout Specification

Page Width	=	288pts (4 inches)
Page Depth	=	558pts (7.75 inches)
Column Width	=	288pts (4 inches)
Column Depth	=	522pts (7.25 inches)
Page Gutter	=	108pts (1.5 inches)

NOTE — "page gutter" is the width between left and right logical pages on the physical sheet.

Note also that the present setting for < IMP1 > forces all logical pages into sequential order with enough blank logical pages placed at the end to fill out to a multiple of four logical pages (one physical sheet).

An Introduction to TSO for SuperWylbur Users

— Don Goldhamer

With the introduction of Ethernet service to the Computation Center's Amdahl 5860 computer, many people will be making brief connections to the Amdahl's MVS operating system from another computer system via the Telnet facility. Two kinds of Telnet programs are currently in use: TN3270 which provides IBM 327x full-screen interaction, and plain Telnet which provides line-by-line interaction. Wherever TN3270 is available, it is to be preferred when connecting to MVS.

At present, people *Telnet*ing from machines which run the TN3270 program can have full-screen access to MVS through either of two interactive interfaces:

Time Sharing Option / Extended (TSO/E) Interface

or

SuperWylbur (SW) Interface

Those *Telnet*ing from machines which do not provide IBM 327x support, and must use line-by-line access, cannot yet connect to the SW interface. At this time, such people must use line-by-line TSO.

The following overview of basic TSO facilities is intended to ease new TSO users — in particular people who are familiar with SW — into the TSO environment. The functions which will be touched upon are: logging-on, handling TSO problems, getting on-line help, setting terminal and session characteristics, submitting batch jobs, checking job output and mail, working with datasets, and editing and printing datasets.

Logging-on to TSO (via Telnet):

When you have *Telnet*ed to UCHIMVS1, you must select the LOGON option from the Telnet menu. You will then be passed to the TSO logon procedure. TSO prompts for logon-id and password, but not for a "terminal-id".

The <BREAK> (or <ATTN>) key — used to interrupt a process — does not work via Telnet in line-by-line mode. Instead you must use a two-keystroke sequence of <CTRL>-^ a (where <CTRL>-^ stands for pressing the control key (<CTRL>) and the <SHIFT> and 6 keys (^) all at the same time).

To see a list of other special keys, enter a *?* while in the Telnet menu before you *logon* to TSO.

Handling TSO Problems:

Comments may be helpful regarding two kinds of frequently encountered TSO problems:

- *TSO issues an error message which you don't understand. In TSO, if an error message is unclear, entering a ? in response to the error message will often produce further information and/or suggestions from TSO;*

- *Your communications line is accidentally disconnected. If you are attempting to re-establish connection to a TSO session which was recently interrupted (e.g., by a line failure), you should follow your password with the word RECONNECT.*

On-line Help:

Begin by familiarizing yourself with TSO — enter the commands *TERMINAL LINES(24)* and then *HELP* for an overview of TSO commands.

For most TSO commands, there is additional help (accessed by entering *HELP command*), and many commands have additional help available at the sub-command level.

Setting Terminal & Session Characteristics:

The terminal display parameters — which in SW are controlled by the UPLOW, PAGE, ... parameters — are controlled in TSO by the TERMINAL command. To view the options of the TERMINAL command, enter *TERMINAL LINES(24)* and then *HELP TERMINAL* during your TSO session.

The SW parameter VOLUME is irrelevant in TSO, since TSO assumes that all datasets are cataloged, and normally operates only on cataloged datasets.

The PROFILE command may also be of interest in setting session parameters — see its help file.

Submitting Batch Jobs:

The SUBMIT command performs functions similar to SW's RUN command. Enter *HELP SUBMIT* for information on submitting jobs for batch execution.

Checking Job Output and Mail:

TSO provides an excellent facility, the Interactive Output Facility (IOF), which allows you much greater control of *SUBMIT*ed jobs than do SW's LOCATE, FETCH, SHOW DDNAMES, REROUTE, ... commands. Simply enter *IOF* to access the facility, which offers extensive help. At present, IOF allows you access only to your own jobs, even if you have special ACF2 rules regarding jobs from other projects.

The MAIL command gives access to a comprehensive mail system with extensive internal on-line help files.

Working With Datasets:

In TSO — as in all of MVS — dataset names must begin with a project-id or logon-id as the first field. TSO will append your logon-id automatically to any dataset name you enter, unless you enclose the dataset name in single quotes.

The second field of a TSO dataset name can be up to 8 characters in length and is left up to you, the dataset's owner.

For an MVS dataset created to be used in TSO — unlike one meant to be used in SW — the third field of the dataset's name usually describes the dataset type and is selected from among a group of standard dataset name suffixes.

Some TSO commands look for specific suffixes in the dataset name. The TSO editor EDIT uses the dataset name suffix to determine default values for the dataset's format. The most common dataset name suffixes known to EDIT — and the commands which use them — are:

suffix	used for	command(s)	forces uppercase?
FORT	Fortran	FORT	yes
ASM	Assembler	ASM & ASMH	yes
TEXT	Text	FORMAT	no
DATA	Misc. Data		yes
CLIST	TSO CLIST	EXEC	yes
CNTL	JCL	SUBMIT	yes
COBOL	COBOL	COBOL	yes
PLI	PL/I Opt	PLI	yes

When the user must specify a dataset name, many commands will accept a pattern instead of an explicit name, allowing all dataset names that match the pattern to be selected. In these patterns, the asterisk character "*" represents any single character, and the character "-" represents any number of characters.

Caution: When the last character on a TSO command line is a "-" character, it should be followed by a space (" ") before the user presses the <RETURN> key. Otherwise TSO will assume the "-" is merely a continuation signal, and will wait for the remainder of the command to be entered on the next line.

Datasets can be displayed on the terminal screen with the LIST command (equivalent to SW's LIST FROM). Datasets can be located with the CLIST or DATASETS commands (like SW's SHOW DSNAMES ...). The space available on a disk or the space occupied by a dataset can be found through the LSPACE command (like SW's SHOW SPACE and SHOW DSNS LIKE ... SPACE commands).

Datasets can be transferred to or from other computers on the campus Ethernet by use of the FTP command. See the article "Using Ethernet to Access MVS from Chip" later in this *Newsletter* for an illustration of using FTP to transfer files between MVS and Chip. FTP on MVS is somewhat different from other versions of FTP. Unfortunately, there is

no *HELP FTP* file on TSO at this time. Entering ? within FTP on TSO will give you a list of TSO FTP commands and is therefore recommended.

Editing and Printing Datasets:

The LISTOFF and DUPLICAT (or DUP) commands allow one to print datasets (like the SW command LIST OFFLINE). The DUPLICAT command is simpler than the LISTOFF command, and allows normal MVS printing parameters (specifically: DEST(...) FORMS(...) ...) but has no HELP file at present.

Text editing (creating and changing text datasets, including jobs for batch submission) in line-by-line TSO is difficult. The EDIT command has extensive help files, but the editor is clumsy and extremely limited.

Documentation:

Further information can be found in the TSO manuals published by IBM. Particularly useful is the *TSO Terminal User's Guide*.

TOPS-20

Fortran 11 Available

— Joyce Weil

Fortran 11 — a development release of the DEC-20 Fortran compiler — is now available for testing. Its major new feature is that the dollar sign ($) and the underscore (_) are allowed in symbol names. It also supports character substrings in FORDDT. The object code generated for single-character assignments has been optimized to improve run-time performance.

All programs that run under Fortran 10 — the current DECsystem-20 default — will also run under Fortran 11.

Fortran 11 is currently in TEST. Enter:

```
@ TEST FORTRAN
```

to use this version.
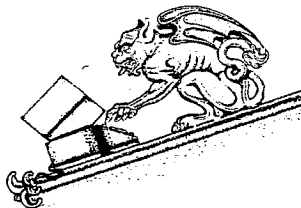
Photographic Service for Graphics

— Dorothy Raden & Joyce Weil

The new version of TELL-A-GRAF now supports software for producing graphics slides on-campus on a Matrix QCR film recorder. In addition to slides, 4x5 color prints and 4x5 black-and-white negatives can be produced.

The Computation Center still offers its own slide-production service. For the old service, the user brings a tape with one or more TELL-A-GRAF SLIDES files to the Center's tape librarian, who then sends the tape to an out-of-town Dicomed 248 film recorder for processing.

The on-campus site eliminates a few steps and an intermediary tape. The production slide facility is managed by the hospital's Audio-Visual Department, and is located in room BH S30 at 5812 S. Ellis Avenue. Contact Michelle Berthold at 702-6263 for further information.

The Matrix film recorder is attached to an IBM AT with a QVP rasterizing board and accepts input in several forms. One form is that of a hex file produced by TELL-A-GRAF on the DECsystem-20 or by SAS on the Amdahl, when the QVP device is selected in those systems as the output device for the plot. The file produced on those mainframe systems is downloaded to an IBM PC/XT/AT (or PC/XT/AT-compatible) processor.

Editing of files, adding or modifying colors, changing fonts and adding other graphic elements are all options to the process.

Also, the Audio-Visual Department has a utility that can process TELL-A-GRAF source files directly. Further, they can produce slides from the PC-graphics design systems Mirage, Autumn and Ego, from Zenographics.

To prepare a file from TELL-A-GRAF to be processed on the film recorder at the Audio-Visual Department, do the following:

- Login to the DEC-20 and connect to the structure on which you do your work (but not the public structure CHIP:).

- Enter:

    @ TEST TAG

- Then enter:

    @ TAG60

- When the prompt for Primary/Secondary device appears, enter:

    QVP

- Then, when the list of nine available output devices and resolution codes appears, choose code 2. This code is for QCR/PCR, Slide Ektachrome 2k, Black, BG. Contact Michelle Berthold for the codes signifying other forms of output.

    2

- Finally, when the prompt:

    Enter # of copies(1-255)

    appears, enter the desired number of copies:

    1

SLIDE is the best page-layout choice for output on film recorders.

To prepare a file meant to produce a 4x5 color print or a 4x5 black-and-white negative, follow the same procedure with the following exception: in all cases, specify only one (1) copy, as each frame must be in a separate file. Multiple copies can be obtained by request from the Audio-Visual Department.

After preparing your color graph, issue a GO/SEND

depending on whether your primary device or your secondary device is QVP. When you have exited TELL-A-GRAF, you will have a hex file on the DEC-20 called SYS$QVP.DAT. This is the hex file that must be downloaded to a 5.25-inch PC diskette using Kermit or another file-transfer program. This procedure was tested at the Center by downloading SYS$QVP.DAT as an ascii file with Kermit.

To have your file downloaded by the Audio-Visual Department from a general DEC-20 directory, call Michelle Berthold.

Using Ethernet to Access MVS from Chip

— Beth Christy

As mentioned earlier in this *Newsletter*, MVS is now on the campus Ethernet, the network connecting many of the computer systems on campus. Consequently, users can now access MVS directly from DECsystem-20 Chip.

There are currently two ways to use the Ethernet to access MVS from Chip. One is to use the Telnet program to initiate a logon session on the Amdahl. The other is to use the FTP (File Transfer Protocol) program to transfer files between the Amdahl and the DEC-20.

Before you begin, you need to know that — as of this writing — Chip knows the Amdahl by two different names. For sending and receiving mail via MM, Chip thinks of the Amdahl as UCHIMVS1. For *Telnet*ing and *FTP*ing, Chip knows the Amdahl as UCHIMVST. This is because the Amdahl is currently unable to receive mail via the Ethernet, so Chip routes mail to UCHIMVS1 specially. If we were to tell Chip that UCHIMVS1 is on the Ethernet, it would attempt to deliver mail that way, and the mail would not get through. By the end of

Winter Quarter, the Amdahl will accept mail via the Ethernet, and Chip will then know it as UCHIMVS1 for all applications.

— Telnet*ing* *to* *MVS* —

Because there is no IBM 327x terminal emulator on the DEC-20, you can only use Telnet to logon to MVS in line-by-line mode — ISPF and full-screen SuperWylbur are unavailable. As of this writing, only line-by-line TSO is available. We hope to make SuperWylbur available through Telnet by the end of December 1987.

To logon to MVS from Chip, enter

Telnet UCHIMVST

at the TOPS-20 system's @ prompt. MVS will respond by identifying itself, typing an informative message you should read, and then prompting you with:

ENTER COMMAND OR 'HELP':

Entering the command *HELP* at this point will tell you what commands you can enter. The first command that is of interest is NEWS. This command will give you timely information about the state of the Ethernet link. Since this link is in test mode now, and consequently rather dynamic, it's a good idea to enter the command *NEWS* whenever you *Telnet* to MVS.

To logon to line-by-line TSO, enter the command *LOGON*. You will begin a normal TSO session — ACF will prompt you for your logon-id and password as it would if you were accessing TSO via the Gandalf class code *MVS48* (or *MVS12* or *MVS3*) and system selection *T* (or *TLOGON*).

Note that since you've logged-on to Chip as full duplex, and since MVS expects you to be at half duplex, the Telnet interface on MVS echos back everything you type. In particular, Telnet echos back your password. ACF expects this echoing, and so it sends a bunch of characters to your screen, hoping to make your password more difficult to read by someone looking over your shoulder. When logging-on through Telnet, however,

these characters don't over-write each other, and your cursor is left at the end of a long line of junk, so that when you type your password, it's clearly visible. Until it scrolls off the screen, be careful that no one sees your MVS password.

Now that you're logged-on to TSO, you can do normal TSO work. See the article "An Introduction to TSO for SuperWylbur Users" earlier in this *Newsletter*. When you're finished with your work in TSO, enter the command *LOGOFF* to leave.

After you've logged-off TSO (or if — after reading NEWS — you decide you don't want to logon to MVS after all), you can enter either of the commands *END*, *QUIT* or *CLOSE* in response to the *ENTER COMMAND OR 'HELP':* prompt, and you will return to TOPS-20.

— *Using* *FTP* *to* *Transfer* *Files*
Between *MVS* *and* *Chip* —

While there are a large number of options available when using FTP, the most common use is to simply copy files between the two machines.

Note that a SuperWylbur EDIT format dataset should be converted to CARD image format on MVS, before FTP is used to transfer the dataset.

In the following example, a user with logon-id *pppuuuu* invokes FTP from Chip, connects to the Amdahl, and logs-on. The file *dec.file* is sent from Chip to the Amdahl and stored in *pppuuuu.decfile* on volume STOR01. Then, an Amdahl file, *pppuuuu.mystuff*, is transmitted to Chip, where it is stored as *gotfrm.mvs*. What the user enters is underlined for the sake of clarity.

```
@ ftp <cr>
CHIP FTP User Process 5T(14)
* connect uchimvst <cr>
Connection opened.
 Assuming 8-bit connections.
 <UCHIMVS1.UCHICAGO.EDU -- FTP Server, Enter Command or HELP

* log pppuuuu password <cr>
* <LOGGED IN -    TELNET HOST 128.135.12.101      USER PPPUUUU
* <SESSION # 38
* quote site vol(stor01) <cr>
* send dec.file <cr>
(to remote-file) decfile <cr>
 <- FILE OPEN WITH ATTRIBUTES:
 <TYPE A N    TABS    8    STRU F    MODE S     PATH PPPUUUU.DECFILE
 <VOLS STOR01    DSORG   PS    RECFM FB    LRECL   80     BLKSIZE 3120
 <SPACE 5 3
 <
 <Transfer Complete
 < **FINAL STATISTICS--> DATA BYTES RCVD 456    DISK TRACKS WRITTEN 1
 <RECORDS PADDED       9
 <NET OCTETS RCVD 473    ELAPSED TIME 00.00.01    OCTETS PER SEC. 407
 <USER PPPUUUU    SESSION # 38    PATH PPPUUUU.DECFILE
 <
* get mystuff <cr>
(to local-file) gotfrm.mvs <cr>
 <- FILE OPEN WITH ATTRIBUTES:
 <TYPE A N    TABS   8    STRU F    MODE S     PATH PPPUUUU.MYSTUFF
 <VOLS STOR01    DSORG   PS    RECFM FB    LRECL   80     BLKSIZE 3120
 <
 <Transfer Complete
 < **FINAL STATISTICS--> DATA BYTES SENT 720    DISK TRACKS READ    1
 .<NET OCTETS SENT 474    ELAPSED TIME 00.00.02    OCTETS PER SEC. 159
 <USER PPPUUUU    SESSION # 38    PATH PPPUUUU.MYSTUFF
 <
* bye <cr>
 <Session Terminated

-- Connection has terminated --
* quit <cr>
@
```

PYRAMID/UNIX

tn3270 — Full-Screen Access to MVS

— *Samuel Gassel*

Ordinarily, users connecting to the Amdahl through *telnet* are only able to use the system in line-by-line mode, and cannot take advantage of full-screen SuperWylbur or TSO's ISPF. However, *tn3270* — a program that permits a full-screen full-duplex connection from a Unix machine to an IBM or IBM-compatible mainframe — is now available on Sphinx and on some other campus Unix machines. The *tn3270* program works by telling the Amdahl that you are using an IBM 327x terminal, and that your terminal is capable of performing pseudo-full-screen operations. The resulting terminal session is very similar to a session using class VTAM services.

How to Use *tn3270:*

The simplest way to begin using *tn3270* is to enter *tn3270 uchimvs1* at the system prompt. If the connection is made, you will very quickly see the main MVS menu. Enter *wylbur* to begin a SuperWylbur session, or *logon* to begin a TSO session. From then on you can logon to SuperWylbur or TSO, and do whatever you would normally do. When you logoff, you will be returned to the menu. Saying *quit* or *bye* will end the session. If you have accounts on IBM or IBM-compatible mainframes elsewhere on the Internet, you can use *tn3270* to logon to those machines as well.

Caution: While using *tn3270*, you will be charged for connect and cpu time both on Sphinx and on whatever other machine you are connected to. Moreover, if the system load on either machine is high, reponse time will be slower than if you are logged-on directly.

In order to make full use of *tn3270*, you will need to know what keys perform various essential IBM 327x functions. By default, *tn3270* uses a program called *mset* to check the setting of your TERM environment variable and to map it to a corresponding key-map from the file */etc/map3270*. If no corresponding key-map is found, a default key-mapping is used.
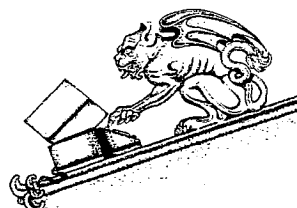
For information on the default key-mappings, which should work on any terminal, enter:

   man map3270

The command will also give you information on how to define your own keys for specific terminals, and on the key-mappings in general. Enter:

   manprint map3270

to get a hard-copy of the *man map3270* output.

The following table displays the default key-mappings.

Default Key-Mappings:

function	keystrokes
PFK1	<ESC> 1
<--> PFK12	<--> <ESC> =
PFK13	<ESC> !
<--> PFK24	<--> <ESC> +
PA1 (SW BREAK)	<CTRL> - P - 1
Cursor Left	<CTRL> - H
Right	<CTRL> - L
Up	<CTRL> - K
Down	<CTRL> - J
Delete Character	<CTRL> - D
Erase to End-Of-Line	<CTRL> - E
Erase Line	<CTRL> - W
Tab	<CTRL> - I
Backtab	<CTRL> - B
Reset	<CTRL> - R
Escape to tn3270	<CTRL> - C

Documentation:

For further information on *tn3270*, you should read the *man* pages for *tn3270(1)*, *mset(1)*, and *map3270(5)*. For printed copies, use the new *manprint* command (enter *man manprint* to learn how to use it.) To obtain a copy of the key-mappings file, enter *qprint /etc/map3270*. Information on Super-Wylbur, RJE and TSO is available through Doclist, a program available on MVS and on DECsystem-20 Chip. Sphinx does not now have a *doclist* program.

Those system managers of campus Unix computers who wish to obtain the latest versions of *tn3270* should send mail to *unixstaff@sphinx*.

Sphinx Software Update

— Tom Barron & Beth Christy

— New Support Services

The Center has developed several new documents, utilities, and procedures for Sphinx, designed both to make information about the system more accessible and to allow users to frame more consistent expectations of Sphinx software. Our aim is to bring the Computation Center's support services for Sphinx more in line with those it has traditionally offered for its other mainframes, without sacrificing the rather open-textured environment that old-time Sphinx users know and love.

New users or those wanting a review of basic system concepts would be well advised to read "Introduction to Unix at the University of Chicago" (UOFCUNIX in Doclist), our introduction to Unix in general and Sphinx in particular. This manual was just entirely rewritten. In addition, Memo 4246 has been updated to include statements of support levels for Sphinx software. Knowledge of these support levels is helpful if one wants to avoid or seek out some of the more experimental programs on the system.

Printed copies of either of these documents may be obtained through the Doclist program, either on MVS through SuperWylbur or on DECsystem-20 Chip. Sphinx does not now have a *doclist* program. Comparable information may be obtained on Sphinx through the *notice* utility.

Sphinx now has a *notice* utility — similar to the Notice utilities on our other mainframes — that provides an easy way to read announcements, bug reports, and other important information by category. The simplest way to use this utility is to enter:

notice

at the command prompt, and then to enter:

help

at the *notice* utility's sub-command prompt to see a list of available *notice* sub-commands. For a complete description of available options and sub-commands enter:

man notice

at the command prompt.

Sphinx users can now obtain typeset hardcopy of on-line manual pages through the *manprint* command. For example:

manprint -D usit notice

will typeset, print, and deliver to Usite the on-line manual page for the new *notice* command. Enter:

man manprint

or

manprint manprint

at the command prompt for further information on this command.

If you encounter problems with Sphinx software, please report them by electronic mail to the 'user' *bugs*. We will make every effort to reply to your mail and to fix or report the bug as appropriate. For help with using Sphinx software — and as an alternative to contacting the Advice Desk at Usite by other means — you may send mail to the 'user' *advisor*. Again, users should refer to Memo 4246 and make use of the *notice* utility to find out about the support levels, already-known problems and work-arounds for software on Sphinx.

— **OSX 4.0 Conversion**

On October 24, Sphinx's operating system was upgraded from OSx 3.1 to OSx 4.0. This means that Sphinx is now running the latest release available of Pyramid's operating system. Everything

should work as well or better than before the upgrade, compatibly with the way it ran before the upgrade. If you notice exceptions, please send mail to *bugs*.

For those who are curious, OSx 4.0 is essentially 4.2 BSD with various 4.3 enhancements (including 4.3 networking) in the Berkeley universe and system V release 2 in the ATT universe. For an explanation of *universes* see the introductory manual mentioned above.

— **Tcsh**

The Center has installed on Sphinx an enhanced shell, or command interpreter, which provides the following features and more ...:

- command line editing using *emacs*-style commands

- visual step up/down through a time-stamped history list

- interactive command, file name, and user name completion

- spelling correction of command, file, and user names

- look-up of command documentation in the middle of a typed command

Also installed is a long *man* page. We recommend:

manprint Tcsh

if you are interested in using this shell. To change your login shell to *Tcsh*, use the *chsh* command specifying your user-id and */usr/local/bin/Tcsh* as the shell argument. As you've probably guessed:

man chsh

will tell you all you need to know about this command.

— **tn3270**

See the previous article for information on the *tn3270* program.

— **Other New Software**

A significantly faster suite of *grep* utilities have been installed on Sphinx. See the corresponding *notice* entry for information on these, or for guidance as to how to get the old *grep* utilities instead.

A streamlined version of *GNU emacs* has been installed as *mg* (for Micro Gnu). *mg* doesn't provide all the features of *gemacs*, but its key mapping is consistent with *gemacs* and it loads much more quickly, so it's good for quick editing jobs (e.g. when composing mail). As always,

    man mg

will get you started with it.

Yet another mail utility has been installed. The Mail Users' SHell (*mush*) is an interactive mail manager with a customizable user interface. The *man* page is very descriptive, but quite long, so we recommend *manprint mush*.

— **A Word About Mail on Sphinx**

With the installation of *mush*, there are at least five mail interfaces available on Sphinx, including *mail*, the *mh* suite, *emacs' r/smail* package and *gemacs' r/smail* package. The Computation Center is considering which of these packages to support long-term.

mail is a standard Unix utility, and will always be supported as such. The others are optional packages, and although they will probably remain available, we will only offer full support for one of them.

Users who have used more than one of these mail interfaces (not including *mail*) are encouraged to send mail to *suggestions@sphinx* to let us know which is your favorite and why. We'll make the support decision by the end of Winter Quarter, and will announce it via the *notice* program and in the Spring *Newsletter*.
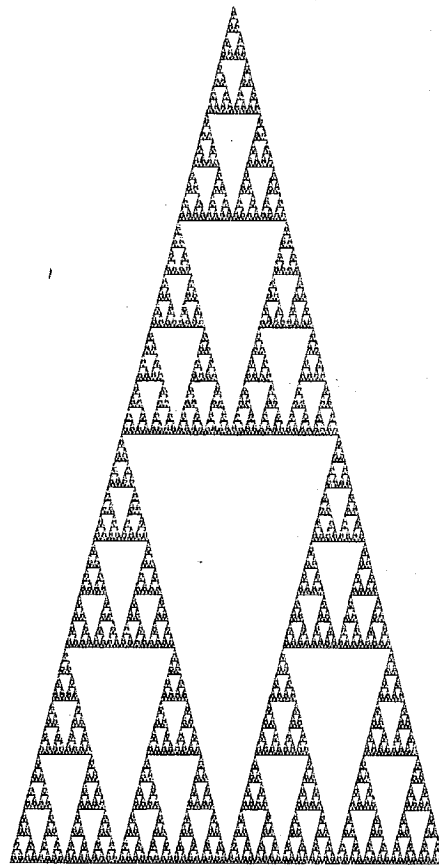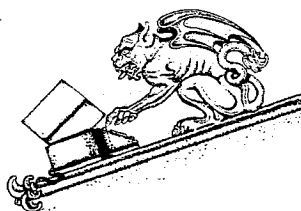
MICROCOMPUTING

New Microcomputer Information Group

— *Dorothy Raden*

The Microcomputer Information group is a new Computation Center unit, created to provide more coordinated support to users of microcomputers. The unit is managed by Dorothy Raden, who reports to the Assistant Director for Information Technologies and New Services, George Bateman.

The Microcomputer Information group will include the Demonstration and Development Lab and a new "hotline" service supporting selected microcomputer systems and software. The group will also handle special microcomputer projects. Plans are now underway for starting and maintaining the new microcomputer hotline.

Watch the *Newsletter*, the *Maroon* and system notices for further details.

Microcomputer Store to Open

— *Bob Thompson*

In the past the Microcomputer Distribution Center (MDC) has not been able to demonstrate products or advise members of the University community. The MDC's basement facilities were not suited for providing the traditional amenities of a storefront facility. These issues will be addressed early Winter Quarter with the opening of the Microcomputer Store. The Store will be located in Room 317 of the Computation Center at 1155 E. 60th St. It will be open from 10:00 a.m. to 4:00 p.m., Monday through Friday. All sales functions of the MDC will be relocated to the Microcomputer Store, and the MDC (basement of the New Graduate Student Residence Hall at 1307 E. 60th St.) will only inventory and distribute items which have already been purchased at the Store.

Microcomputer Store sales representatives will be available to discuss the products offered by the MDC, give brief demonstrations of selected hardware and software, and sell MDC products.

Storage space in the Microcomputer Store will be limited, but a small inventory of software and peripherals will be maintained. Customers will be able to pick up these items at the time of purchase. Larger items purchased at the Microcomputer Store, as well as items purchased at the Store but not picked up at the time of purchase, must be picked up at the MDC at 1307 E. 60th Street (rear entrance). Customers will be given a form verifying their order which will enable them to pick up their equipment from the MDC during its regular hours of 10:00 a.m. to 4:00 p.m., Monday through Friday.

Watch the *Maroon* for details on the Grand Opening of the Microcomputer Store in January.

MDC Update

— Bob Thompson

Apple has announced new Bundle packages for the Holidays. From now through January 15, members of the University community can purchase the Macintosh Plus or Macintosh SE together with the Imagewriter II for significantly less than if they had bought these products individually. Recently, prices on the Apple Laserwriter, Laserwriter Plus, and Desktop Publishing Bundle have also gone down substantially. These products feature the latest version of Postscript, which allows them to process bit-map images up to 40% faster and construct fonts up to 25% faster than before. Upgrades to this version of Postscript for existing LaserWriters and LaserWriter Pluses are also available. Call the MDC (702-6086) for details.

The Computation Center provides service on all Apple products, and service contracts are available from the MDC. Service on MS-DOS products is offered through a third-party service company, REX Service.

The MDC currently offers hardware from Apple, AST, Compaq, Hewlett-Packard, IBM, U.S. Robotics and Zenith, and software from Apple, Arborworks, Ashton-Tate, Centram, Farallon, Living Video Text, Lotus, Microsoft, Minitab, Systat, and WordPerfect.

Pricelists are available on the third floor of the Computation Center (1155 E. 60th St.), at Usite (Wieboldt 310), and at the MDC.

If you have special needs, feel free to call the MDC at 702-6086 or Joyce Morris, the Administrative Coordinator, at 702-6082. If there is a product in which you have an interest, send a note to David Davoust, University of Chicago Computation Center, 1155 E. 60th St., Chicago, IL 60637.

D & D Lab Update

— Ben Jones

The Microcomputer Demonstration and Development Laboratory at 1155 E. 60th St has received the following hardware and software. Products in the Lab can be used, examined or demonstrated by calling 702-7151 for an appointment. A full listing of the products in the Lab is contained in MICLAB on DECsystem-20 Chip. Enter "MICLAB" at the TOPS-20 command prompt "@".

New Hardware:

Tandy 4000: a very fast IBM-compatible computer based on an **Intel 80386** chip. It is equipped with a high-resolution EGA-compatible color monitor, and has a speed of 16 MHz.

IBM Model 50: IBM's **PS/2** computer, which uses the 80286 chip and the new **Microchannel Bus** architecture. Advances in software allow the Model 50 to be considerably faster in reading and writing on its **Winchester** drive than IBM's previous generation of computers. The Model 50 also uses the newer 3.5-inch floppy drives which hold more data than the 5.25-inch floppies. Finally, the Model 50 uses the new analog monitors which allow far more colors and better resolution than the older IBM personal computers.

Another addition to the MS-DOS computers in the Lab is the **Zenith EZ-PC**. This is an inexpensive system with all the basics. It is small, fairly fast, and can be bought in one of three configurations depending on need and budget. The screen is attached to the computer and is capable of 16 shades of gray. Versions with a single 3.5-inch floppy disk drive, two 3.5-inch drives, or a 3.5-inch floppy drive and a 20-megabyte **Winchester** drive are possible. The Lab has the version with two floppy drives.

Our Hewlett Packard Vectra computer has been replaced with a **Vectra ES/12** computer. This is very similar to the original Vectra but runs at 12 MHz instead of 8 MHz. Like the earlier model, this one is equipped with a 20-megabyte **Winchester** hard disk. The new one, like the old one, is equipped with a high resolution color monitor.

IBM Proprinter II: a nine-pin dot-matrix printer that can print up to 240 characters per second. It has a built-in tractor feed and a front slot for single sheets. It has two near-letter quality modes of printing, and both double-wide and double-high printing.

New Software:

In the MS-DOS world, we have received several new pieces of software.

Demonstration disks for software from Lotus have arrived with the following demo programs:

Demo of **Lotus Metro** — Thirteen accessory programs which stay in memory and provide the services of a calendar, a clock, a notepad, keystroke recording and playback, etc.

Demo of **Lotus Freelance** — A freehand graphics and plotting program.

Demo of **Lotus Measure** — A data acquisition and analysis program.

Demo of **Revelation** — A database by **Cosmos**.

Other new software includes:

Systat version 3.0 for IBM-compatibles: a powerful and accurate statistics program, comparable to SAS and SPSS.

Minitab version 5.1.1 for MS-DOS: the popular statistical system also available on the Center's DEC-20.

C version 3.0.1: a programming system by **Mark Williams**.

Software for the Macintosh includes:

Hypercard version 1.0: a very unusual "information web" program which lets you browse among a variety of types of information such as text, pictures, sounds, maps, etc. It allows you to build your own network, or stack, of items, and to create your own pathways for browsing among them.

Macintosh Multifinder: software that allows several different programs to be running at once and provides background printing.

Microsoft Word version 3.01: an upgrade that fixes a number of nasty bugs found in version 3.0, and provides a couple of minor improvements.

National Instruments has provided the Lab with a demonstration version of **Labview,** its instrumentation-controller software. This program allows a person running laboratory equipment to control it from a Macintosh screen, using pictures of knobs, dials, buttons, and meters.

MacDraw version 1.9.5 by **Apple**.

MacProject version 1.2 by **Apple**.

MacTerminal version 2.2 by **Apple**.

CricketDraw version 1.0.1 by **Cricket Software**.
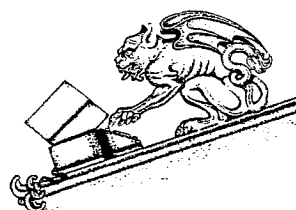
DEPARTMENTS

People

People who have joined the Center:

Samuel Gassel has become a Junior Programmer/Analyst I in Application Systems. **Robert Kusumoto** is a Student Program Adviser in Instruction and Documentation Services. **Theodore Reichardt**, formerly Student Program Advisor, has joined the Center full-time as a Production Expeditor. **Keith Vallely** is a Clerk/Messenger with the Business Office. The following people have joined the Center as Stock Clerks in the Microcomputer Distribution Center: **Stuart Feldman, Rodney Hearne, Craig Hoffman, Steven Jones**, and **Philip Loh**.

People who have left the Center:

Paul Shiffer and **Leslie Wolke**, formerly Stock Clerks in the Microcomputer Distribution Center, and **Major Robinson**, formerly Production Expediting Trainee, have left the Center. **Joseph Golas**, formerly Programmer/Analyst in Library Systems, has taken a job with the Hospitals.
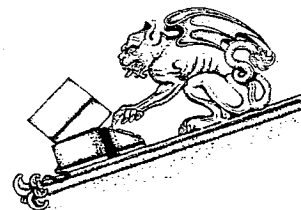
People who have been promoted:

Dorothy Raden has been promoted to Manager of the Microcomputer Information group, a new Center unit discussed earlier in this *Newsletter*.

Open Positions at the Center

The following full-time positions were open at the Computation Center as of November 19. Detailed descriptions of the positions may be obtained from the Center's receptionist or from the person listed with each position. The University is an affirmative action/equal opportunity employer.

Senior Systems Programmer — Responsible for systems program development, installation, maintenance, performance analysis and tuning. Requirements include from two to five years experience in one or more of the following operating systems: MVS, TOPS-20, Unix.   *Michael E. Willey, 702-7617.*

Senior Programmer/Analyst — Responsible for installation and maintenance of applications programs on the operating systems above. Requirements include superior programming skills and knowledge of minicomputers and microcomputers. *Donald H. Goldhamer, 702-7166.*

Documentation

New Documentation Available

11/11/87 **R187D** *SuperWylbur MACRO Programming*
This manual (R187D or SW37MACR in Doclist) discusses the MACRO programming facility under version 3.7 of SuperWylbur. The MACRO facility is a programming language that uses normal SuperWylbur commands as program commands.

10/15/87 **4380** *Guide to Electronic Mail*
This memo describes electronic mail and file transfer procedures to and from the Computation Center computers -- the Pryamid, DEC-20, and Amdahl 5860. It provides detailed information for the Amdahl while pointing to appropriate documentation for the other two machines. Technical information about mail formats and standards is provided as well as specific addressing conventions. An appendix discusses domains and networks. A second appendix describes the commands for the UCLA Mailer used on the Amdahl.

10/15/87 **4222** *1960, 70 & 80 CENSUS TAPES*
Tape information for the Community and Family Study Center special tabulations was added. This includes the Chicago SMSA data for 1940, 1950, 1960, and 1970; and the SMSA data for 1980 STF-2A and STF-3A.

10/01/87 **4352** *Generation Data Groups*
Memo 4352, "Installing a Generation Data Group under MVS," has been extensively updated to represent current Center GDG procedures.

Recently Updated Documentation

10/15/87 **4341** *1980 CENSUS DATA*

New in the MVS Notice File

10/02/87 **MVS6** *GDG USERS MAY BE AFFECTED BY CATALOG MOVES*

09/11/87 **IMSL4** *IMSL Version 10 Information*

09/09/87 **TRT13** *Infinite loops result from improper footnotes in titles*

New in the DEC Notice File

10/12/87 **SVC5** *Advice Desk Information*

09/11/87 **FORT4** *Fortran 10 Features*

09/11/87 **IMSL1** *IMSL Version 10 Information*

09/09/87 **TRT8** *Infinite loops result from improper footnotes in titles*

Index of Center Newsletters

The following index covers the twelve issues of the *Computation Center Newsletter* from the February 1985 issue through the Fall 1987 issue. Within this period, the *Newsletter* changed from a monthly to a quarterly publication. As a result, "Feb'85" refers to February 1985, while all of the other abbreviations refer to seasons: "W" - Winter, "F" - Fall, "Su" - Summer, "Sp" - Spring.

By the end of Winter Quarter, hard-copies of these *Newsletters* should be available through a public macro on SuperWylbur. Watch the system notices for an announcement.

IBM-PC . . . . W'87, F'86, Su'85

IOF . . . . F'85

IMSL . . . . F'87

Kermit . . . . F'86, Sp'86, W'85, F'85, Su'85, Sp'85

Kurzweil . . . . Su'86

Labels . . . . Sp'87, F'86

Laser Printing . . . . Su'85

Listoff . . . . Feb'85

Macintosh . . . . W'87, F'86, Su'85

Mail . . . . W'87, W'85

Math . . . . F'85

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       Apple . . . . W'87, F'86
       Bulletin Boards . . . . Su'86
       Humanities Computing Facility . . . . . F'86
       IBM-PC . . . . W'87, F'86, Sp'86
       Kermit . . . F'86, Sp'86, W'85, F'85, Su'85
       Macintosh . . . . W'87, F'86, Su'85
       Microlab . . . . W'87
       Printing on 9700 . . . . W'85
       SAS-PC . . . . F'86, Su'86, Sp'86
       SPSS-X . . . . Su'85
       T$_E$X . . . . Sp'87, F'86

MicroLab . . . . W'87

Model 204 . . . . F'85

Money . . . . W'85

Muse . . . . Feb'85

MVS:

       3380 disks . . . . F'87, Su'87, Sp'87
       ACF2 . . . . F'85
       Amdahl 5860 . . . . F'85
       Bitnet . . . . Sp'86
       C language . . . . Su'87

Catalog . . . . F'85
CICS . . . . F'85
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DETAIL . . . . Su'87, F'87
Ethernet . . . . F'87, Sp'87
Epic . . . . Sp'87, Sp'86, W'85
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Fortran(VS) . . . . Su'87, Sp'87, Sp'86
Graphics . . . . Sp'87, F'85
ICF Catalog . . . . Sp'86
IOF . . . . F'85
IMSL . . . . F'87
Laser Printing . . . . Su'85
Mail . . . . W'87
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MAXSORT . . . . Su'87
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SuperWylbur . . Sp'87, Su'86, Sp'86, F'85
TELL-A-GRAF . . . . Sp'87
T$_E$X . . . . Su'87, Sp'87
Treatise . . . . Sp'86
TSO . . . . Sp'87, W'85, F'85, Feb'85
VTAM . . . . Su'86, F'85
/XA . . . . W'87, F'86

NSFNet . . . . Su'86

Pascal . . . . Sp'87

PCA's . . . . F'86, F'85

Plotting . . . . F'85

PRINT . . . . Su'86

Printing . . . . Su'87, Su'86, Sp'86, W'85, F'85

Publishing . . . . Sp'86

Pyramid:

       Archiving . . . . F'86, F'85, Su'85
       Kermit . . . . Sp'86
       Mail . . . . W'87
       OSx 4.0 . . . . F'87

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860 and the DEC-20, Chip.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization August 1987 - October 1987

Service Provided	Amdahl 5860/MVS August 1987	Amdahl 5860/MVS September 1987	Amdahl 5860/MVS October 1987
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs	3:10	2:33	2:44
non-setup jobs	1:35	1:32	1:38
tape setup jobs	22:23	15:56	18:52
Total CPU-hours used	254 hrs 0 min	230 hrs 18 min	255 hrs 48 min
SuperWylbur sessions	16,336	16,651	16,691
CPU hours	9 hrs 16 min	9 hrs 54 min	10 hrs 35 min
connect hours	12,230 hrs	12,770 hrs	12,049 hrs
average session	45 min	46 min	43 min
average CPU/session	2.04 sec	2.14 sec	2.28 sec
TSO sessions	3,921	4,168	5,156
CPU hours	6 hrs 13 min	7 hrs 56 min	9 hrs 12 min
connect hours	1,827 hrs	2,084 hrs	2,513 hrs
average session	28 min	30 min	29 min
average CPU/session	5.70 sec	6.86 sec	6.43 sec
Jobs submitted	49,140	52,397	53,210
Steps executed	98,213	103,224	103,417

* Time (minutes:seconds) from job submission until job completion, from 10:00 a.m. until 5:00 p.m., Monday through Friday at normal priority (85% of the jobs are completed at or under the time shown).

The reported connect-time does not include Model 204 or CICS connections.

Top Twenty MVS Programs August 1987 - October 1987

Program	Description	Percent	Count
SASLPA	SAS	8.39	28,990
UCFLBL20	Filebol	8.35	28,840
WYLLIST	SuperWylbur list offline	6.04	20,877
IEBGENER	IBM file handling utility	6.01	20,752
SORT	SyncSort	5.20	17,977
IDCAMS	VSAM utility for catalog operations	3.84	13,282
IEFBR14	IBM utility - null step	3.29	11,353
SUCCESS	Operating Services utility	3.16	10,903
FAIL	Operating Services utility	3.12	10,786
MARKYBOL	Systems utility	2.46	8,487
IEWL	Linkage editor	2.34	8,087
IBMDEC	IBM/DEC link utility	2.32	8,020
BATCH204	Model 204 run in batch	2.25	7,785
MAILXBM	Bitnet mail through SuperWylbur	2.04	7,054
SPSSX	SPSS Version X	1.86	6,421
MVGDG	Multi-volume tape GDG cycler	1.06	3,655
IKFCBLOO	VS Cobol version 2.4	0.99	3,431
PGM = *.DD	User defined routines	0.93	3,199
IEBCOPY	IBM partitioned dataset utility	0.92	3,167
COMPUSET	Xerox text composing program	0.89	3,076

CHIP - DECsystem-2060 Utilization August 1987 - October 1987

Account Period	August 1987		September 1987		October 1987	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	107.3	4651	107.5	4820	98.0	5016
EVENING	38.4	652	41.1	529	36.0	770
OVERNIGHT	117.7	974	96.9	817	100.0	981
TOTAL	263.4	6277	245.5	6166	234	6767

Top Twenty Chip Programs August 1987 - October 1987

Program	Description	Percent	Count
OPR	Operator functions	9.58	24,864
MM	Electronic Mail Manager	9.13	23,699
PTYCON	Pseudo-terminal controller	4.99	12,967
SYSDPY	Operator interface with job queues	4.92	12,776
WATCH	Generates these statistics	4.89	12,705
MMAILR	Network mail daemon	4.89	12,699
NETSRV	Supports ethernet network functions	4.89	12,695
SYSJOB	System job controller	4.88	12,677
RWHOD	Lists users on ethernet hosts	4.88	12,677
USAGE	Utility to collect program use data	4.88	12,670
IBMSPL	MVS link daemon	4.87	12,655
WINDOW	Full screen PTYCON	4.86	12,621
BITNET	Off-campus electronic mail network	4.71	12,221
EXEC	TOPS-20 command processor	4.52	11,728
1022	Database system	4.30	11,166
BATCON	Batch Controller	2.66	6,913
DEMAND	Data management system	1.98	5,136
MINITA	Interactive statistical program	1.37	3,561
EMACS	Full screen editor	1.34	3,477
MUSE	Full screen editor	1.25	3,255

General Information

Computation Center Administration

Acting Director of the Computation Center	John E. Iannantuoni	702-7616
Associate Director		
Operations and Technical Services	John E. Iannantuoni	702-7616
Assistant Directors		
Instruction and Research Information Services	Harold C. Bloom	702-7155
Information Technologies and New Services	George R. Bateman	702-7174
Finance and Administration	Peter B. Hayward	702-8671
Administrative Information Services	David E. Trevvett	702-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	702-7151
Microcomputer Distribution Center	1307 E. 60th St., Rear Entrance	702-6086
Multi-media Classroom	Harper 406	702-7153
Usite Terminal Cluster	Wieboldt 310	702-7894

Computer Communications Information

Phones	**300 baud**	**1200 baud**	**2400 baud**	**4800 baud**	**9600 baud**
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	**300 baud**	**1200 baud**	**2400 baud**	**4800 baud**	**9600 baud**	**telenet**
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	mvs24/vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20	chip	chip	chip	chip	chip	chiptn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	**General address form**	**Example**
Amdahl 5860 (MVS)	*logon-id*@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	*username*@chip.uchicago.edu	staff.hal@chip.uchicago.edu
Pyramid 90x (Sphinx)	*person-id*@sphinx.uchicago.edu	halb@sphinx.uchicago.edu

Telenet dial-in information

Nearest phone number	**Network address**
800-336-0437 most states	312436 (300 baud)
800-572-0408 Virginia	31236 (1200 baud)
	312437 (2400 baud — DEC only)

Quick Reference Phone Directory

Information
General 702-7151
Machine status 702-7626

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Refunds 702-7624

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   Suggestions & complaints
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   Word processors

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Programming 702-7166

Data entry services 702-7604

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Subscriptions to the Newsletter 702-7159

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Computation Center
1155 E. 60th Street
Chicago, IL 60637

( ) Please add my name and address to your mailing list.

( ) Please change my name and address as shown below. (Please supply name *and* address, even if one stays the same.)

( ) Please delete my name from your mailing list.

Name
_____

Address
_____

Address
_____

Address
_____

City
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The University of Chicago
Computation Center
NEWSLETTER

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GENERAL NEWS

Discount Agreements with Digital Equipment Corporation

The University has entered into a strategic relationship with Digital Equipment Corporation (DEC), initially for one year with plans for a longer term. The relationship entails a set of agreements resulting in a discount for the University of 40% of list at the time of order on most system purchases. The agreements also yield a discount for the University of 30% of list at the time of order on all other discountable hardware purchased and software licensed from DEC.

These discounts apply to products only; service and maintenance fees are specifically excluded, although a University-wide hardware maintenance agreement exists. We expect that a new agreement will be in place by January 1989, upon expiration of the current agreement.

Additionally, the University has been nominated to participate in the VAXstation University Consortium. Upon completion of the requisite agreement, VS2000, VSII/GPX and VS3x00 systems and 3xxx server systems will be available at discounts between 40% and 57% of list. Discounts will vary by system and are generally lower for add-ons.

For additional information, contact John Iannantuoni of the Computation Center at 702-7616 or Don Poder of the Purchasing Department at 702-3324.

Supercomputing at the University of Chicago

— *Eric Nelson*

In December, the University of Chicago joined a group of other universities as an Academic Affiliate of the National Center for Supercomputing Applications (NCSA). NCSA is one of five centers for supercomputing established by the National Science Foundation (NSF) in 1985. The other four centers are the Cornell Theory Center, the Pittsburgh Supercomputing Center (PSC), the San Diego Supercomputer Center (SDSC), and the John von Neumann Center (JVNC) at Princeton University.

The charter of NCSA and the other centers is to provide access to supercomputing resources for universities and companies that need the computing power, but don't have the money to buy the expensive equipment required. As part of this initiative, the supercomputer centers are also the backbone of the growing national computer network, NSFNET. (For more information on NSFNET, see the Summer 1986 *Newsletter* article "U of C Joins NSFnet Today; Tomorrow the World".) This network is intended to provide high-speed access to the centers from anywhere in the country. Future *Newsletter* articles will discuss the other centers and the planned upgrade of the NSFNET.

NCSA is located at the University of Illinois at Urbana-Champaign, and is jointly sponsored by the NSF, the State of Illinois, and the University of Illinois at Urbana-Champaign (UIUC). Presently, they provide access to a Cray XM/P 48 supercomputer and an Alliant FX/8 multiprocessor mini-supercomputer. In the fall of 1988, they plan to have a Cray-2 available for researchers and affiliates.

As an Academic Affiliate, the University of Chicago is provided time on the Cray XM/P for research and teaching. This time is available to help researchers and students learn about the technology, so it can be applied to scientific questions. This is a kind of seed grant providing access to a true supercomputer for classes. It also serves to provide the opportunity for researchers to determine whether their research requires such power and speed, and if so, how much time on the machine will be needed to complete a given project.

For example, if a researcher has a simulation program currently needing two days on a VAX for just one set of parameters, and the complete study would entail the examination of several sets of parameters, it is clear that the project would complete much more quickly if it were to run on a faster machine. Time on the NCSA Cray from our Affiliate Block Grant could provide time for two functions: first, to convert the program to run on the Cray, allowing optimization for vector processing; and second, to run tests determining how much CPU time each simulation run will take. When the researcher knows how much CPU time is needed to complete the project, an application for that time can be made directly to the NCSA Review Board.

Note that the NCSA can only provide time on the machines. Any grant applications requiring money for the project must go to the NSF.

Access to the NCSA facilities from campus is easiest by way of the Internet. All the machines on the University's Ethernet network can get access to the NCSA machines using the standard Telnet and FTP programs. Telephone access is also possible, although recent NSF budget cuts have limited telephone access and access via GTE Telenet. For further information, see memo 4380, "A Guide to Electronic Mail at the U of C," available through Doclist.

Much of the motivation behind the development of supercomputing technology has come from the physical sciences, e.g. physics, meteorology, astronomy, and chemistry, and most of the work still is done with programs that are written for a particular research question from one of these fields. As a result there are few *packages* on the Cray. Instead

there are extensive Fortran libraries of mathematical and graphics routines that have been optimized for the Cray architecture. Still, some general packages are available for chemistry and engineering applications, and SPSS is trying to transport SPSSX to the Cray.

On both the Cray and the FX/8, the most sophisticated compilers are for Fortran programs, though both have C compilers. Due to historical and language features, most work on compilers for vector and parallel systems has been Fortran-based. In addition, there are extensive statistical, mathematical and graphical libraries available through Fortran that are not as readily accessible through C.

Hardware at the NCSA

The Cray XM/P 48 is accessible directly from the Internet, or by way of a VAX 11/785 VMS cluster. The Cray runs the Cray Time Sharing System (CTSS) from Lawrence Livermore Laboratories, has a high-speed solid-state storage device (SSD), sixteen Cray DD-49 high-speed disks, and access to an unlimited-storage Common File System (CFS) that is managed by an IBM 4381.

The Cray has four processors that run an 8.5-nanosecond clock. When running code that is optimized for vector processing, each processor can perform more than 200 million floating point operations per second (200 megaflops). Although it is possible, the NCSA Cray is not configured to allocate more than one processor to any job. The central memory provides 8 million 64-bit words of very fast memory. CTSS takes up 500k words, and user space available in main memory ranges from 2.5 to 6 megawords (depending on the time the program is run). The SSD can be used to add up to 12.5 megawords (for very high-speed I/O transfer — 1 gigabyte/sec) to supplement main memory.

Access to the Cray is easiest by way of the front-end VAX cluster. The VAX cluster is connected to the Cray by way of a high-speed I/O channel. The cluster only provides basic functions like file editing, access to the CFS storage system, mail and connection to the Cray. It is not possible to compile and run user programs on the VAXen.

The Alliant FX/8 has just been made available to

affiliates and users. Running standard 4.2 BSD Unix, the FX/8 is a fully-parallel eight-processor machine with vector-processing hardware. Sixteen interactive processors outside the primary processors handle basic functions to free processor cycles on the main processing elements. Vector processing permits up to 94-megaflops performance.

Resources at NCSA

Associated with NCSA is an Interdisciplinary Research Center (IRC), primarily supported by the State of Illinois and UIUC. The IRC has a staff of full-time and visiting researchers working on problems of scientific computing. Resident scientists are available to visitors to assist in developing software for particular problems.

Also at NCSA is a program called the Scientific Visualization Project. As the size of problems for analysis and simulation have grown, the problem of fully interpreting reams of data has also grown. The Visualization Project has a special interest in helping researchers translate data into images that can make patterns more readily evident. Videotapes, movies and slides can be made from computer-generated data. Previous projects include simulations of tornado cloud formations, neutron star collisions, and fluid dynamics of very high-speed flows.

Documentation and Further Information

NCSA provides affiliates with documentation on most of their systems and resources. These have been sent to the NCSA liaison, who is available to provide technical and administrative help in getting and using time at NCSA. In addition to a collection of Cray XM/P manuals, and manuals on the mathematical and graphics libraries, some videotapes on using the systems (CTSS, COSMOS, Vectorization, Fortran DDT, and others) are available. For more information, or if you are interested in applying for some of the time allocated to the University of Chicago, contact the NCSA liaison, Eric Nelson, at the Computation Center (702-7575). You will get an application packet that will provide more complete information on the program and application process.

Where's My Output!?!

— Rich Marshall

Even if you can't locate your job in the MVS system — through, say, either the SuperWylbur *SHOW JOBS* command or the SuperWylbur *LOCATE* command, as in:

```
? LOCATE nnnn <CR>
JOB NOT FOUND
?
```

where *nnnn* is the number of the job you're looking for — your output has not necessarily completed, or even started, printing.

As the print files of a job sent to the Xerox 9790 printer leave the MVS spool, they are stored on the 9790's disk before they actually print. The files are stored on this disk in much the same way that they were stored on the MVS spool. Accordingly, the line count you see if you enter the SuperWylbur *LOCATE* command for the job, as in:

```
? LOCATE nnnn <CR>
JOB nnnn MYJOB ... ON PRINTR4 LINE 158 OF 597
?
```

where *nnnn* is the job number, represents how much of your job's output has gone to the 9790 disk, not how much has actually printed.

As indicated above, once your job's print files have left MVS completely, a SuperWylbur *LOCATE nnnn* command will result in the message *JOB NOT FOUND*. At this point, whether your print files print immediately or they wait in line for as much as half an hour depends on such factors as the number of lines contained in the print files and the length of the 9790 internal print queue.

How long a job's output files wait before transmission from the MVS spool to the 9790 internal disk and how long they then wait in the printer's internal queue before actual printing do not depend on the priority requested for the job on it's JOB card. However, this priority does determine how long the job must wait for resources while still on MVS, and a request for high priority on a JOB card will move the job through execution and into the print queue faster than a request for lower priority. The cost of 9790 printer resources is determined by this job priority and high priority rates are normally higher.

See memos 4168, 4169 and 4170, available through the Doclist program, for exact rates. See memo 4155, also available through the Doclist program, for an explanation of the JOB card and an introduction to Job Control Language (JCL) in general. Finally, see the manual "SuperWylbur RJE 3.7" (*R187C* or *SW37RJE* in Doclist) for an introduction to remote job entry through SuperWylbur and a discussion of the *LOCATE* and *SHOW JOBS* commands.

As far as MVS is concerned, once your job has been completely transmitted to the output device, it is gone, even though it has not actually printed. This is why a Xerox 9790 "Rollover" — or printer crash — that happens to occur when output no longer on MVS is still on the Xerox 9790 disk, can result in lost reports. This is also why your job can be *NOT FOUND* by MVS before it is ready to be picked up.

MVS

ACF2/Password Changes Implications

— Emil Baciu

As a result of a security study of the Computation Center, several changes to the ACF2 password facilities have been made or planned for the MVS/XA operating system. Among these changes are an increased minimum password length and automatic password expiration.

Please note that these changes may affect users who need MVS passwords to communicate with MVS from other systems. See the related article in the TOPS-20 section of this *Newsletter*.

Minimum Password Length of Six (6) Characters — This change was implemented at the beginning of February and requires no change to existing passwords. However, if a user attempts to change his or her password to one shorter than six (6) characters, ACF2 will reject it with the following message:

ACF01130 NEW PASSWORD LESS THAN MINIMUM LENGTH - NONE SET

but will not indicate what the minimum acceptable length is. Unfortunately, we cannot modify ACF2 to give a more helpful message.

The maximum password length remains at eight (8) characters.

Automatic Password Expiration — This change will force individual passwords to expire after a fixed number of days. The exact period has not yet been decided. Restrictions in ACF2 prevent us from selecting a period greater than 255 days. This change is scheduled for next autumn, and will be reviewed again in the fall *Newsletter*.

The expiration is planned to function as follow:

- A person who logs onto TSO or Super-Wylbur and whose password has expired will be prompted for a new password, which he or she must enter before proceeding.

- Changing a password will automatically reset the expiration period of that password.

- Starting 31 days prior to his or her password expiration date, a person who logs onto the MVS system will receive the warning message:

ACF01134 YOUR PASSWORD WILL EXPIRE ON mm/dd/yy.

where *mm/dd/yy* stands for the expiration date.

- MVS batch jobs submitted with expired passwords will not execute and will receive the message:

ACF01017 PASSWORD FOR LOGONID pppuuuu HAS EXPIRED.

where *pppuuuu* stands for the logon-id under which the job was meant to execute.

- The Computation Center will ensure that Production batch jobs submitted under person-id *PR* by Operating Services on behalf of the user will continue to run.

- Since passwords in ACF2 are time stamped as well as date stamped, it is remotely possible to have a password expire during a terminal session in TSO or SuperWylbur. In this case, the terminal ses-

sion will not be interrupted. Batch jobs submitted from such a session, that inherit the session's logon-id, do not require a password to execute and therefore will continue to run.

●   MVS batch jobs submitted from DECsystem-20 Chip require an MVS password and may not execute if the password has expired. This includes print jobs submitted through the MVS program on Chip.

We are currently investigating the full impact of this change, to be certain that there will not be unanticipated problems. The companion article in the TOPS-20 section of this *Newsletter* describes how we think password expiration will affect TOPS-20 users.

If you know of some other area likely to be affected by this change, please send a description of the problem to Emil Baciu at 1155 E. 60th Street, or send electronic mail to:

SYSTEMS.EMIL@CHIP.UCHICAGO.EDU

To avoid problems, it is recommended that — prior to the installation of the automatic password expiration feature — the user form a regular habit of changing his or her password.

Detail Program Enhanced

— Kay Sandacz

The program invoked by the public macro Detail will now accept a wildcard mask for a jobname. When the macro prompts for a jobname, you can enter the first few characters of the jobname or jobnames you want to report on, followed by an asterisk ("*"). The program will then select all jobs whose names begin with those characters. For example, if you've run a series of jobs named

"PROBIT74", "PROBIT75" and "PROBIT76" for a particular analysis, you could enter "PROBIT*" as a jobname mask to generate a report of charges and totals only for that analysis, regardless of any other computer charges accrued during the same time period.

In particular, entering a request for jobname "TP*" will result in a report of tape and tape slot charges made to a project or project/person combination. This is a convenient way to see what tapes you have in permanent storage, since each jobname consists of "TP" followed by the actual tape name, as in "TPT98623". Charges for permanent tapes and slots are made twice a month, on the 15th and on the last day of the month.

Similarly, using the jobname "OSU*" will report on tapes in temporary storage during a given time period. Here, the jobname consists of "OS" followed by the tape name on the external sticker, as in "OSUMYTAP". These charges enter the accounting — and thus are available through Detail — once a month, usually around the 20th.

Further information on the Detail program can be found in memo 4349, "Job Reporting System," available through Doclist. Watch the logon messages for an announcement of an update to this memo reflecting the enhancements described above.

Sweeping the Bitnet Post Office

— Ron Thielen

Bitnet mail sent to

   logon-id@UCHIMVS1

and Internet mail sent to

   logon-id@UCHIMVS1.UCHICAGO.EDU

are stored by the Amdahl/MVS system in a VSAM cluster until the recipient deletes it.

When the mail VSAM cluster, known as the "post office," becomes filled, no new mail can be received. This has actually happened, and a new policy has been developed to prevent it from happening again.

On the first Saturday of every month, mail which meets either of two criteria will be copied from the post office to a dataset under the user's logon-id. The criteria for copying a given user's mail are:

1. The mail has never been read and is over 90 days old.
2. The mail has been read, but not within the last 30 days.

The mail is then deleted from the post office and the following note is sent to the user:

Monthly maintenance on MVS mail system has determined that you had one or more messages which either had never been read and were more than 3 months old or had been read but had not been looked at in the last 30 days.

These messages have been removed from the public post box and placed in a dataset under your account. The dataset is named:

         logonid.LOG.$mmddyy

You may process this dataset as a mail log file under the M.4 option of TSO ISPF.

If you have any questions about this process, please feel free to ask the program advisor at 702-7624.

Mail on MVS may be accessed via the TSO *MAIL* command, or the ISPF full screen mail interface, or the SuperWylbur macro invoked by *PUB MAIL*. Each of these procedures has a *HELP* command that provides information about specific commands. Memo 4380, available through Doclist, contains both general network mail information and specific information about the mailer on MVS.

To prevent this automatic creation of datasets, use the *DELETE* command within the mailer. If the file should be saved, use the *INTO* option of the *READ* command before deleting the message.

The Interactive Output Facility (IOF) on TSO

— *helen seren*

Ethernet service to the Computation Center's Amdahl 5860 computer allows people to connect to the Amdahl's MVS operating system from another computer system via the Telnet facility. Two kinds of Telnet programs are currently in use: TN3270 which provides IBM 327x full-screen interaction, and plain Telnet which provides line-by-line interaction. Wherever TN3270 is available, it is to be preferred when connecting to MVS.

Those *Telnet*ing from machines which do not provide IBM 327x support, and must use line-by-line access, cannot yet connect to the SW interface. At this time, such people must use line-by-line TSO.

Perhaps you *Telnet* to MVS in order to check the progress of a job. If you normally use SuperWylbur (SW) you might feel lost in TSO.

The Winter 1988 edition of this *Newsletter* provided a brief introduction to TSO for SuperWylbur users. This article continues that introduction by describing the IOF facility on TSO.

IOF is an acronym for Interactive Output Facility (a product of Triangle Systems, Inc.) and allows users to check the progress of a job, examine job output, cancel a job and print a job. In particular, IOF lets users locate, fetch, purge, print, and reroute jobs.

How To Get Into IOF

IOF is available as option I within Interactive System Productivity Facility (ISPF, a product of IBM) or directly from the TSO *READY* level. If you are at TSO *READY* level — the word *READY* is displayed on your terminal — typing *IOF* (followed by a carriage return) will invoke the program. A carriage return is required after typing any IOF command. Pressing the *RETURN* or *ENTER* key "enters" the command you just typed.

Checking job progress ("show jobs" in SW)

Just invoking IOF, as described above, gives you what is called the "Job List Menu". This is your level-one display. The status of each of your jobs is summarized on one line. Jobs are grouped together by the function they are performing or waiting to perform:

INPUT JOBS — are waiting to execute.
RUNNING JOBS — are executing.
OUTPUT JOBS — include all jobs that have completed execution, those with held output and those with non-held output.
HARDCOPY JOBS — are waiting to print, no output is held.

Each job in the display is preceded by a reference number at the far left of the line. To get more information about a single job, select it by entering its reference number. IOF will then display the "Job Summary Panel". This is a level-two display. The contents of this display depends upon a job's current status.

For jobs that have completed execution, for example, the return code for each job step is listed. A separate line for each output DDNAME in each step is listed with such information as status (held or not), output class, destination, forms, copies, etc. Each DDNAME line also has a reference number at the far left.

Examining job output ("fetch" and "list" in SW)

While in the "Job Summary Panel," you can display one or more output datasets by entering one or more of the reference numbers separated by blanks, followed by the letter *B*. If you would like to

see the entire job ("fetch all" in SW), enter the word *browse*, or just the letter *B*.

To go back to the "Job Summary Panel" level-two display, when you've finished examining your output, enter *END*. To return all the way back to the "Job List Menu" level-one display, enter *RETURN*.

Releasing held output ("print" in SW)

After you have checked held output, you can release a job to print. From the "Job List Menu" display, enter the reference number of the job followed by the letter *R* (for release). Individual output datasets can be released from the "Job Summary Panel" by entering the DDNAME reference number (or numbers) followed by the letter *R*.

Saving job output into a disk dataset ("save into" in SW)

To save one or more output files into a disk dataset, there are two steps:

● first tell IOF to open the disk dataset by entering the command *SD* (for Snap Dataset) from the "Job Summary Panel". The default dataset name is logon-id.jobname.IOFLIST.

● then, to snap one or more of your output files to that disk dataset, enter the reference number (or numbers) followed by the word *SNAP*. If you enter *SNAP* without any reference numbers, the entire job will be copied into the disk file.

Canceling a job ("purge" in SW)

Suppose you'd like to get rid of an entire job. From the "Job List Menu" display, enter the reference number of the job followed by the letter *C* (for cancel).

How to Exit IOF

To leave IOF from the "Job List Menu," enter *END*.

Where to find more Information

There are many additional IOF commands and options. You can learn about them by using the on-line help facility (enter *HELP* at any point within

IOF). The "IOF User Guide" is available through Doclist as item *R150* or *TSOIOF*.

At the time of this writing, the production version of IOF is Release 5.0. Release 6.A is being tested and will be installed soon.

TOPS-20

ACF2 Password Policy Will Affect DEC Users

— Ernie Froemel

Starting next fall, people who submit jobs or print requests to the Amdahl/MVS system exclusively from the DEC-20 will be affected by the planned change in ACF2 password procedures reported earlier in this *Newsletter*. Beginning next autumn, if a DEC-20 user's MVS password is over a certain — yet to be determined — age, MVS batch jobs and print requests submitted by the user from the DEC-20 will fail. This failure will not occur, however, until the Amdahl attempts to run the job. It will not be evident until the user examines the output.

If you routinely change your MVS password, you will avoid the inconvenience of having to resubmit jobs that failed because your MVS *PASSWORD... HAS EXPIRED*.

You may use the MVS program on DEC-20 Chip to change your MVS password, either by using the *CHANGE* command, or by simply entering *old-password/new-password* whenever you're prompted for your password.

An example showing the use of the *CHANGE* command follows:

```
@ mvs
. MVS . 3033 .
MVS > change
```

To change your MVS password enter Old-password/New-password when prompted for your password. A job will then be run on the MVS system to change your password. Use the 'INFORMATION JOBS' command to locate the job. Using the Fetch command you can then fetch that job to be sure that your password was changed. See memo 2052 for more information on using the MVS program.

```
Enter MVS Project -- prj
Enter MVS Person ID -- pers
Enter password for PRJ-PERS-- oldpass/newpass
Password change requested, type old/new password
again to confirm-- oldpass/newpass
        (Note that the passwords at the above two
        prompts are not displayed at your terminal.)
Password change accepted
[Batch job MVS queued, request #1881, limit 0:05:00]
MVS > exit
@
```

The output from this job will be returned to Chip and may be fetched using the MVS program. If the password was successfully changed, the following line will appear in the output:

```
***ACF01129 PASSWORD SUCCESSFULLY ALTERED
UCHIMVS1
```

If the password was not changed, there will be a message attempting to explain the reason. For example, the following line will appear when attempting to change the password to less than six characters:

```
***ACF01130 NEW PASSWORD LESS THAN MINI-
MUM LENGTH - NONE SET UCHIMVS1
```

The *SET ALERT* command may be used to remind you to change your MVS password. To use this DEC-20 feature, place a *SET ALERT* command in a file called alert.cmd on the public structure (CHIP:).

For example, to be reminded to change your password on June 1st, the command could be:

set alert 06/01/88 Change password today (minimum of 6 characters)

To make this message automatically appear whenever you login starting on June 1, 1988, add this line to your login.cmd file:

set automatic

Further information about the MVS program may be found in Memo 2052, available through Doclist. That memo is also on-line in NOTES:MVS on Chip. While running the MVS program, you may enter *help* for help.

The *SET ALERT* command is described in the "Tops-20 Command Reference Manual," which may be examined at Usite, Crerar, and Regenstein clusters. It is filed in the racks as R227.

Forwarding Mail from Chip

— *Tom Barron*

A mail forwarding system has been installed on Chip. It will allow mail sent to a username on Chip to be automatically forwarded to another mail address on any computer.

To enable forwarding, simply create a file called forward.txt in the *ps:* home directory containing the full forwarding-address name, including username, node, and any domains and subdomains. Shortly after midnight a job will come along and activate your forwarding.

For example, a person with an id of *PERS*, enrolled in a project called *PRJ*, would have a Chip username of *P.PRJPERS*. To forward mail to another machine, the file ps:<p.prjpers>forward.txt would

be created with a one-line entry. To re-route mail to Sphinx, that entry would be:

pers@sphinx

To re-route mail to the Amdahl (*uchimvs1*), the one line would be:

prjpers@uchimvs1.bitnet

Since forwarding is activated by a batch job, it cannot be toggled on and off within any given day. If the batch job finds the file, it will initiate forwarding to the indicated machine. If it doesn't find the file, forwarding is turned off. The outcome of the batch job remains in effect until that job is run again.

One difference from Unix forwarding is that the Chip scheme admits of no way to both have a local copy and forward. Another is that it does not allow forwarding to more than one address.

If there are problems with forwarding from Chip, please send mail to *staff.advisor@chip*.

PYRAMID/UNIX

Saving Sphinx Disk Space & Money

— Beth Christy

So you want to save some money on disk storage, eh? The first thing you need to do is to find out how much space you're using, and where it is. Then you'll know where to concentrate your efforts. To do that, enter *du* ~ . The character ~ is a special character which means to Unix "my home directory." Entering the command *du* ~ will report on how many kilobytes of disk storage are currently allocated to each directory under your home directory. Entering *man du* will give you more information about using the *du* program.

As an example, if user *fooo* entered *du* ~ , the output might look something like:

```
120     /u1/fooo/stuff/important
280     /u1/fooo/stuff
140     /u1/fooo/tyrone
480     /u1/fooo
```

This would mean that *fooo* was using a total of 480k of disk space, 140k of which was in the directory *tyrone*, and 280k of which was in the directory *stuff*. Of the 280k in the directory *stuff*, 120k is allocated to the directory *important*.

Charges are currently $0.0015 per page per day, where 1 page is 2k or 2048 bytes. So *fooo*'s 480k of disk space takes up 240 pages, and *fooo* is charged $0.36/day. For a thirty-day month that would be $10.80.

To save disk space, there are several options. First, you could delete all of your files. That would certainly save you money, but it's probably not an acceptable solution. Along the same lines, but probably more acceptable, would be to make a habit of regularly, perhaps monthly, going through all of your directories and finding and deleting files that are no longer relevant. Good candidates for news junkies would be dead.articles and dead.letters. Good candidates for *gemacs* or *emacs* users would be the backup and checkpoint files that the *emacs*'s automatically generate. Good candidates for programmers would be object (.o) files. Good candidates for all users would be core files.

Files that you don't really want to get rid of completely, but that you won't be looking at often, can be moved to tape using either *tar* or *dd*. To purchase or rent a tape, contact the Computation Center's Tape Librarian at 702-7614. To find out more about using tapes on the Pyramid, enter *man tapemount*, *man tar* and *man dd*.

If you have files that you would still like to keep on-line, but that are very large, or if you have directories of many very small files, you can still save substantial disk space. The *compress* program on Unix systems will squash a large file down, sometimes to as little as 30% of its original size. The *uncompress* program will expand it back so that you can work with it again. If you just need to read a compressed file, *zcat* (or *uncompress -c*) will display it uncompressed on standard output, but will leave it compressed on the disk. Enter *man compress* for more information on *compress*, *uncompress* and *zcat*.

Very small files can use a disproportionate amount of disk space. Each file is allocated space in multiples of 2k. So 20 files of one or a few lines each would use 40k of disk space. You can save much of this space by using the *tar* program to create a single file from a directory of small files and subdirectories, and then using *rm -r* to remove the

directory and its contents. *tar* can also restore the original directory from the *tar* file. Enter *man tar* for more information on *tar*.

Once you've created a single file from a directory, you can then use *compress* on that file to save even more disk space.

For example, suppose user *fooo* had a directory *zippy* which *du* showed was using 120k of disk space. Using *tar* with the *-f* option will let you "archive" to disk rather than to tape. Entering *tar -cf zippy.tar zippy* would create a file named zippy.tar, which is all of the contents of directory *zippy* rolled into one file. It might use anywhere from 80k to 120k. Entering *compress zippy.tar* would create a file named zippy.tar.Z, which could be as small as 20k. Entering *rm zippy.tar* would remove the 80-120k intermediate *tar* file. Then entering *rm -r zippy* would free the original 120k that *zippy* used, giving you an 83% reduction in disk space.

To recover the orginal directory, enter *uncompress zippy.tar.Z; tar -xpf zippy.tar*. Then enter *rm zippy.tar* to remove the intermediate *tar* file. If you just want to look at the files you can leave zippy.tar.Z and then remove the directory *zippy* when you're done looking. If you'll be changing anything in the directory you should remove zippy.tar.Z, and re-create it (using the procedure above) when you're done making the changes.
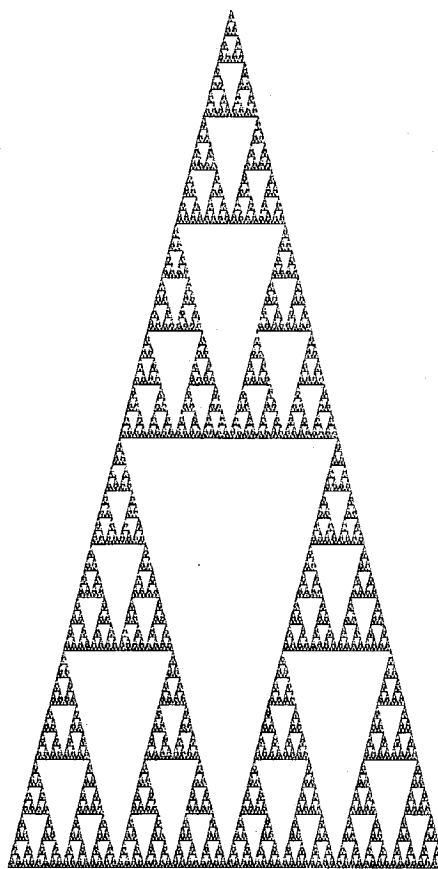
MICROCOMPUTING

SAS and SPSS Site Licenses Obtained

— *Donald Tom*

The Division of the Social Sciences has obtained a site license for the distribution of *SPSS/PC+ Version 2.0*. University faculty and staff interested in obtaining copies for instructional or research use should contact Allen Harden, Director of Divisional Computing for the Social Sciences, at 702-7131. There is a $50 per year fee for copies of the base and advanced statistics modules.

The Computation Center has obtained a site license for the distribution of *SAS-PC*. If you are a member of the University faculty or staff and are interested in obtaining copies for instructional or research use, contact Catherine Kosto at 702-7153. There is a small fee for copies of each of the various modules.

Along with version 6.03 of the SAS products for IBM PC's and compatibles, the Center has received *SAS/GRAPH*. University faculty and staff can obtain a copy for $50 per year, or $100 per year if the individual does not already have SAS/BASE and SAS/STAT. For further information, contact Catherine Kosto at 702-7153.

Software for the AT&T 6300s at Usite

— *Donald Tom*

The following microcomputer software is available for the AT&T 6300s at Usite, which are IBM PC look-alikes. Only faculty, staff and registered students may use this software.

DiskManagerPC has been installed to prevent piracy of software from the hard disks on these machines.

The AT&T 6300s run *MS-DOS Version 3.1*.

The following software is also available, although not every machine has all the software.

Word Processing: *WordPerfect Version 4.2*

Spread Sheet: *Lotus 1-2-3 Version 2.01*

Data Analysis: *Minitab Release 5.1.1*
SAS-PC Version 6.02
SPSS/PC+ Version 2.0

Language: *GW-Basic Version 2.02 Release 2.1*

Utilities: *Scroll & Recall Version 1.6*— for screen & keyboard enhancement
Kermit Version 2.29— transfers files between the PC and another computer
Laser Printer Software— for printing *WordPerfect* files on the U of C Xerox 9790 and Xerox 2700 laser printers

Instructors interested in using the Usite PCs and software for instructional purposes should contact the Clusters Supervisor at 702-0108 for availability of software and the setting of priority hours for class use.

What's Up in the D&D Lab

— Bruce Geryk

The following new hardware and software now resides at the Demonstration and Development Laboratory, at 1155 E. 60th St. For an appointment to see any of the equipment demonstrated or to examine it yourself, call 702-7151. The following new items are in addition to the hardware and software listed in MICLAB on the DEC-20.

New Hardware:

In the MS-DOS family

Three new machines have arrived from **Zenith**.

- The **Z-286** is based on the 80286 micro-processor, has a 20 MB hard drive, a 1.2 MB floppy drive and 512K of RAM, and runs at 8 Mhz with one wait state. Attached to it is the **ZCM-1490** monitor (also from **Zenith**), an analog RGB color monitor which uses the new flat tension mask technology and has a resolution of 640x480. A **Z-449** card installed in the Z-286 provides compatibility with the monitor.

- The second **Zenith** machine is the **Z-159**, which uses the **Intel 8088-2** micro-processor and has 640K system RAM and 384K Extended Memory Specification RAM, a 360K floppy as well as a 20 MB hard drive. The processor has zero wait states and is able to switch clock speeds to run at either 4.77 or 8 Mhz. It also has a **Zenith 1240** amber monitor.

- The third **Zenith** machine is a **Z-248** and uses an 80286 processor running at 8 Mhz with zero wait states. It has 512K of RAM, a single 1.2 MB floppy drive and a 20 MB hard disk. It is equipped with a **Z-449 VGA** video adapter and a **Zenith 1390 VGA** color monitor.

Yet another **HP Vectra** has joined the lab — this time it's a **Portable Vectra CS PC**. This machine has an 80C86 micro-processor, 640K RAM, two 1.44 MB floppy drives, and a clock speed of 7.16 Mhz. It comes with a 640x400 LCD display, a video interface which is both RGB and CGA compatible, and the optional internal modem. It has a 92-key AT-style keyboard, and has a battery life of up to 10 hours.

The lab has received another machine in IBM's PS/2 line. The new arrival is the **IBM Model 25**, which is at the low end of the line and uses a 16-bit 8086 micro-processor operating at 8 Mhz. It has 512K RAM and two 720K floppy drives. Instead of the new Micro Channel Architecture used in other machines in the PS/2 line, the Model 25 uses the standard PC-bus. It has a built-in monochrome monitor which supports the MCGA standard.

There are also two new **HP** printers in the lab: the PaintJet and the DeskJet. The **PaintJet** is designed to produce both high-resolution color graphics and fast NLQ printing. It is capable of printing either 330 colors at 90 dpi or seven colors at 180 dpi. Text can be printed at between 167 and 200 cps. The **DeskJet** is an inexpensive 300-dpi printer which uses the thermal ink-jet technology to quietly produce laser-quality output at 120 cps using either a parallel or serial interface. It has a built-in sheet feeder and handles a variety of font cartridges.

In the Macintosh family

Several new peripherals have arrived from **General Computer Corp.**

- The **HyperDrive FX/40** is a 40 MB external hard drive for the Macintosh which has automatic head-parking on power-down and comes with software allowing one to set the SCSI ID, as well as park the heads and format the drive.

- The **HyperTape** is a tape backup unit which allows backups onto a standard DC2000 40 MB tape cassette. It comes with a backup utility which allows both full and incremental backup and restore.

- The **Personal LaserPrinter** is a 300-dpi laser printer. It uses QuickDraw instead of PostScript and is not networkable, serving one Macintosh at a time.

- Finally, the **HyperCharger 020** is an accelerator board for the Macintosh SE which provides the SE with the 68020 micro-processor — the same micro-processor used in the Macintosh II. In addition, the board comes with 1 MB of high-speed RAM. Once installed, the HyperCharger replaces the 68000 micro-processor in the SE and acts as the new mother-board.

The **Rodime 100PLUS** is a 100 MB external hard drive for the Macintosh from Rodime Systems. It is about the same size physically as Apple's HD20, and can sit under a Macintosh Plus or SE.

New accessories for the Macintosh II include **Apple's HiRes RGB Color Monitor**, a 13-inch RGB monitor which has a resolution of 640x480 and can display from 16 to 256 colors simultaneously, and **Apple's PC Drive**, which is a 5 1/4-inch external floppy drive that allows the transfer of MS-DOS files to and from the Macintosh using the Apple File Exchange. The latter does not, however, allow a user to actually run DOS programs on the Macintosh.

The **AST Mac286** card, though, actually provides the Macintosh II with the capability to run MS-DOS programs in an AT-compatible environment. The DOS emulation runs in a window and provides a separate user-specified partition which can provide up to 20 MB of storage space through an IBM hard-disk emulation.

New Software for IBM and Compatibles:

Dr. Halo III, Version 3.00.08 by Media Cybernetics: the latest version of this color graphics package. It adds on-screen help, a Lasso to move irregularly-shaped objects, color swapping, palette customizing, an improved printer interface, and two supplemental programs: **Grab**, which allows users to capture graphics created by other graphics packages for use in Dr. Halo; and **Presents**, which allows a series of Dr. Halo images to be organized into a slide show presentation or a series of images to be queued for batch printing.

Microsoft Chart, Version 3.0: a presentation graphics package. It allows the user to create a wide array of charts and graphs using many chart templates, and to integrate these with text, as well as to link them to spreadsheets and databases. It also allows for regressions, transformations, descriptive statistics, and math commands.

Microsoft Fortran Optimizing Compiler, Version 4.01: an upgrade that incorporates enhancements to the compiler and linker as well as changes to the language and run-time library.

Microsoft Macro Assembler, Version 5.0: assembler that produces relocatable object modules from assembly-language source files. These object modules can be linked using the MS-Overlay Linker to create executable programs. Object modules created with MASM are compatible with many high-level-language object modules, including those created with the Microsoft Basic, C, Fortran and Pascal compilers. It supports all instructions and addressing modes of the Intel 80386 micro-processor and 80387 math co-processor, as well as the 8086, 8088, 80186, 80188, 80286, 8087 and 80287 chips.

Microsoft QuickBASIC, Version 4.0: a program with several enhancements, including instant compilation, interactive debugging, a direct-execution window which allows the testing of program state-

ments, support of multiple modules in memory, and automatic library generation.

Microsoft QuickC demo: software that provides an environment with an integrated compiler, debugger and linker, allowing the user to edit errors in code during program compilation. QuickC compiles at 10,000 lines per minute, and has optimization features borrowed from Microsoft C Version 5.0. It also has a source-level debugger which facilitates a single-step, animate or trace debug of the execution of a program, with a "watch window" which allows a user to track the values of local or global variables. Included also is a sophisticated editor, which provides a "hot key" to toggle between two files, as well as cut, copy and paste features.

There are additional tools: a graphics library, math co-processor support (8087 and 80287, and a floating-point emulation package for accuracy without a math chip). QuickC supports over 300 standard library routines, including UNIX System V and Microsoft-specific libraries. Finally, QuickC was designed to support the same language and libraries as the MS-Optimizing Compiler Version 5.0, so that object modules need only be re-linked under QuickC. Other Microsoft language routines can also be linked in.

Microsoft Project, Version 4.0:   a scheduling and reporting program with many enhancements over previous versions. These include custom report-design capabilities and an "automatic resource leveling feature" which resolves resource-usage conflicts by shifting activities within slack time. In addition, the program offers more control over specification of time-dependent projects and their completion schedules, setting lead and lag times, LAN (Local Area Network) support, a number of new printing and display enhancements, and file import and export facilities.

New Software for the Macintosh:

Aztec C, Version 3.40B, by Manx: an upgrade to the C programming language system.

dBase Mac, Version 1.0, by AshtonTate: a complete relational database manager by the makers of dBase III for IBM and compatibles. Features include multiple views, a full procedural language,

and the ability to directly access data from dBase II, III, and IIIPlus, as well as to import and export data from or to Lotus, Excel, Double Helix, Omnis 3 Plus, and Framework II.

Fastback, Version 1.02, by 5th Generation Systems: a high-speed backup utility for backing up a hard drive to floppies.

Helix, Version 2.0, by Odesta: a version of the Helix database manager that is not compatible with Version 1.0. Added features include an enhanced Template, new calculation tiles for the Abacus, picture storing, Quick Query, and improved printing.

MacDraft, Version 1.2b, by Innovative Designs: a drafting tool for creating two-dimensional precision line-art drawings that now offers Macintosh II compatibility.

Microsoft Multiplan, Version 1.1:   an enhancement of Microsoft's spreadsheet that includes context-sensitive help, simplified linking, multiple windows for each spreadsheet, new command keys, and seven new financial functions.

Professional Composer, Version 2.2, by Mark of the Unicorn: an upgrade of the score notation software that allows text manipulation, interval transposition, key-signature insertion, meter removal, etc.

Ready,Set,Go!, Version 4.0, by Letraset: an upgrade to the page-processing package that allows enhanced manipulation of text and graphics layout.

Thunderscan, Version 4.0A, by Thunderware: an image scanner whose enhancements include improved gray-scaling and compatibility with the Macintosh SE.

Please consult the Miclab program on the DECsystem-20 at any time for complete listings of hardware and software in the Lab, by entering *MICLAB* at the "@" prompt.

Update on Public Domain Mac Software on Sphinx

— *Ellen Seebacher*

For years, the Computation Center has been making public domain software from various networks available to Macintosh users for no more than the price of a phone call. **None of this software is guaranteed by the Computation Center.** As useful as some programs can be, not everything free is a bargain. Many "Trojan horse" programs have been passed on to unsuspecting users, eventually causing mischief like destroying other data on their disks. The possibility of finding "worms" or "viruses" should cause you to be very, very careful about the software you test.

For an introduction to the basic terminology of public domain software, see the article on page 4 of the Winter 1988 *Newsletter*. A complete discussion of obtaining software locally and over networks is being prepared.

Archiving of public domain software on Sphinx:

Another concern of users has been the astounding amount of material available, which has made finding any given program extremely difficult. To combat this problem and save disk space on the Sphinx, software which has been available in the Sphinx directory */usr/sun/mac/news_src* is now being regularly moved to tape. After a program has not been accessed for two months, a systems manager will move it to the */arc* directory, where it will remain for one to two weeks. The material will then be backed up to tape; users can restore files from tape archives via the Unix command *arcrest*.

An archive policy for software on Chip (the Computation Center's DEC-20) has not yet been determined.

New file conversion utilities on Sphinx:

Many Macintosh users are familiar with one procedure for downloading programs from Sphinx, which

can be summarized as follows:

1. copy Sphinx-file-name.hqx (the ASCII representation of the binary file) to your directory;
2. use *xbin* on the file to obtain Mac-file.info, Mac-file.rsrc, and Mac-file.data;
3. use the Unix command *macput [Mac-file]* in conjunction with your favorite terminal emulator.

Due to the extreme shortage of space in the */u1* (user) directories on Sphinx, we are encouraging users to try the new utility *macbin*. This takes the three files Mac-file.info, Mac-file.rsrc, and Mac-file.data, and combines them into the binary file Mac-file.bin. The .bin format, because it is binary, takes up only half as much space on disk as the .hqx (ASCII) format found on a network. Because most file transfer programs for the Mac have a MacBinary-compatible transfer mode, you need only set your transfer program to this mode to download the .bin file. There are currently no utilities to convert .bin files back to .info, .data, .rsrc format, so you will not be able to use *macput* to download the files.

As an example, you may set your file transfer program to MacBinary Kermit, and then use the following Unix commands to transfer the file to your Macintosh:

/usr/sun/mac/bin/macbin Mac-file
    [filename only, no extensions]

kermit -s Mac-file.bin *-i*
    [the *-i* flag means "send binary"]

For regular news readers and users of large programs in our archives, we have recently added the new utility *gluehqx*. *Gluehqx* strips the headers from multiple parts of downloaded software, thus preventing the bother of editing them out manually. It also performs minor integrity checking, looking for a single set of the Binhex begin/end-file characters. If a problem is found, *gluehqx* returns an error message like:

GlueHqx = = > Looks bad, 0 EOF markers

How to use gluehqx:

Use the Unix command *cat* (concatenate) to combine the parts into a single file. Then pipe the concatenation through *gluehqx* to strip the headers. Suppose you have a multi-part, *Binhex*ed program with parts called Ralph1, Ralph2, etc. Enter:

cat Ralph* | */usr/sun/mac/bin/gluehqx* > glob.hqx

Because the asterisk "*" is a wildcard character, *cat* combines all the files. The character " | " pipes these files through *gluehqx.* Output is redirected to the file glob.hqx, which can be downloaded using any procedure you prefer.

Gluehqx can take one option, *-v.* This sends verbose output to your terminal, listing exactly what has been stripped from the files. If this output is not recognizable English, something is wrong.

Caveats:

Gluehqx is not a standard command of the form *command-word [argument]* as it must be used within a pipe to work properly. Also, because the program checks the integrity of its input files, *gluehqx* cannot be used to strip, say, the eight parts you have saved of a fifteen-part file.

No problems have been reported so far, but as with all public-domain and related material — use at your own risk.

One final note: If you often copy programs into your directory and leave them for days or weeks at a time, a way to save more space than simply *macbin*ing them is to use *compress.* This Unix program produces files with the extension .Z — which save anywhere from a quarter to two-thirds the space of the original files. Use *uncompress* to prepare the files for downloading. For more information, consult the *man* pages on Sphinx. See also the article "Saving Sphinx Disk Space & Money" earlier in this *Newsletter.*

Kermit Update

— Samuel Gassel

Over the past few months, updates for Kermit, Columbia University's public domain file transfer and terminal emulator program, have been released for many of the systems we support here at the Computation Center. Additional updates are expected soon. This article describes these new versions, their features and availability.

Mainframe Kermits

In addition to Rice Kermit, the officially supported version for TSO, the Center now also provides a program called VTAMKERM, which enables file transfer through the 7171 protocol converter. It will also work in regular half-duplex MVS. Both of these should shortly be made obsolete by a forthcoming "Portable-370" Kermit designed to run under any IBM mainframe OS, and offering many advanced Kermit features.

On Sphinx, a new version of C-Kermit, Version 4E(070), has been installed. It offers many bug fixes, correct job stop/start with CTRL-Z, and long packets (up to 1000 bytes per packet instead of just 94).

Microcomputer Kermits

The latest version of Kermit for the IBM-PC and compatibles is the brand-new MS-Kermit Version 2.30. It features long packets, VT102 emulation which can automatically switch to a Tektronix 4010 mode for graphics, a full macro and keyboard mapping facility, and — unlike prior Kermits — it works correctly with internal modems. Until local documentation is rewritten, we will provide only the Columbia manuals for this version.

The latest released version of Kermit for the Macintosh is 0.8(035). Unlike prior Kermits, it runs correctly on the Mac SE and the Macintosh II. A still newer version which will offer many wonderful new features, including background file transfer under MultiFinder, is currently being written and tested.

Documentation

The Center provides two types of documentation for Kermit — the original Columbia manuals and local Center memos. The Columbia manuals are available through the Doclist program as *KERMITUG*, a user guide for all the systems we support, and *KERMITPM*, a description of the Kermit protocol itself. Documentation for MS-Kermit Version 2.30 will be available separately. Watch the logon messages for further information. The local memos are numbered 6000 through 6003. Please note that to date only memo 6003 has been rewritten to reflect the upgrades, but nonetheless the memos all offer sufficient "cookbook" explanations to get you started.

Getting Kermit

The Computation Center's distribution packages of Kermit, containing keymappings, macros, and local documentation, are available through the Center's Business Office for a handling fee of $15 per package. A list of distributed packages should be available soon. Watch the logon messages for an announcement.

If you already have Kermit, and wish to upgrade, the distribution packages are also stored on-line, on both Chip and Sphinx. On Chip, the files are stored in *DS2:< System.Kermit >*. The Macintosh distribution files are MAC**.**, the PC files are MS**.**. On Sphinx, the files are stored in /local/micro/MACHINE/kermit where MACHINE is pc or mac. Selected unsupported or minimally supported Kermits are archived in *DS2:< test.kermit >* on Chip.

Further Help

Questions about Kermit versions, bug-reports, and so forth may be mailed to *advisor@sphinx* or *staff.advisor@chip*. Questions on usage not covered by the manuals will be answered, if possible, as well.

WordPerfect-to-Script Translator Available

— Samuel Gassel

Users of the popular word-processor WordPerfect will now be able to print their documents on the Computation Center's Xerox 9790 printers, thanks to a new Center-developed program which converts WordPerfect files into input suitable for Waterloo Script. While the program, WP2Script, has been designed specifically to work with files from WordPerfect 4.2 and earlier for the PC, files from WordPerfect on other systems, such as the Apple II GS, may work as well. As WordPerfect 5.0 for the PC and WordPerfect Mac become available, the program will be updated to process the new features in those versions as well.

To use WP2Script, you will need an account on the Center's Amdahl 5860, an ordinary WordPerfect file (do NOT save it in ASCII form), and a copy of Kermit to send the file to the Amdahl. Having logged in to the Amdahl under TSO, start TSO Kermit and issue the following commands:

```
set ascii(off)
set lrecl(512)
set marker(' ^ C')
```

On your PC be sure to say:

```
set eof noctrlz
```

These commands ensure that you will send the binary WordPerfect file to the mainframe correctly.

Having sent the file, you may then run the translator either in TSO by entering *WP2SCRPT* at the *READY* prompt, or in SuperWylbur by entering *PUB WP2SCRPT* at the *?* prompt. You will have the options to:

1.   translate only,
2.   translate and run Script,
3.   translate, run Script and print.

If all you want is printed output, then you will

probably want option 3. If you wish to fine-tune your document in Script, then you will want option 1 or option 2. Help is available at any prompt.

Features in WordPerfect but not in WP2Script

WP2Script does not presently support multiple font-families in a single document, due to our incomplete implementation of Script. WP2Script will not recalculate math, nor will it extract indices, lists, tables of contents or tables of authorities at this time. However, all of these functions can, and thus should, be performed on your PC before upload. The generated text will then be printed correctly. The IBM-extended character set is incompletely implemented — double underlines and double box-lines will appear as single lines, and box corners will not be sharp.

Features in WP2Script but not in WordPerfect

WP2Script supports multiple character sets via the Symgr macro package described in the Treatise manual. The foreign, Greek, and math symbols in the IBM-extended character set are supported in this way. You therefore also have access to the full set of symbols available through Symgr. These symbols include a full Greek alphabet and many mathematical symbols. In general, you may enter any Script command into your document after a hard *RETURN* and be assured of its taking effect. If you intend to use the "Change pitch and font" commands in your document, please note that the default mapping of WordPerfect font number to font set is as follows:

    1 - Roman
    2 - italic
    3 - bold
    4 - bold italic
    5 - Greek
    6 - math
    7 - science
    8 - small caps

If you intend to use your own printer for previewing, you may wish to adjust your printer definitions to match as much as possible.

More details will soon be available in a new memo on WP2Script. Watch the logon messages for an announcement of this upcoming memo.

Macintosh Users Group Active

— Gary Buchholz

If you've been reading the system messages while logging on to any of the Computation Center computers, or you've picked up a copy of *Macrocosm*, you may have noticed that the Macintosh Users Group (MUG) has become very active on campus.

With approximately 300+ members from the University community and a handful of out-of-state members, the MUG provides information and support for users, owners and general enthusiasts of Mac computers. With the general availability of Mac II and the recent release of Apple's UNIX operating system (A/UX), the MUG has extended its interests to other machines and operating systems. Although this makes the group's name somewhat of an anachronism, it allows the group to keep pace with innovation and technology in the field.

Monthly meetings — held at 4:30 p.m., the 3rd Thursday of each month in Billings hospital M137 — have attracted speakers from major software vendors such as Acius, Aldus, Microsoft and Cricket Software. A recent meeting featured a presentation on 4th Dimension by Guy Kawasaki, President of Acius and former Apple software evangelist. Members are encouraged to contribute to the group by giving relevant presentations concerning Mac development projects or use of the Mac in their fields of expertise.

The MUG supports a number of Special Interest Groups (SIGs) that offer in-depth information and discussion on specific areas of interest. Members are encouraged to form — and become leaders of — new SIG groups addressing relevant new Apple

products and innovations. Current membership has expressed an interest in the Mac II, MIDI and A/UX systems and people with expertise in these areas are encouraged to lead these groups.

The Programming SIG offers a number of workshops in Mac application development. During a period of several weeks beginning in early March, the Programming SIG covered a Mac system overview, user-interface guidelines, QuickDraw basics, Window Manager, Event Manager, Menu Manager and Text Edit. The Department of Computer Science generously allowed the Programming SIG to use their Mac Lab, making this a hands-on learning experience even for those who did not own Macs. Topics for future workshops are currently being planned.

With the release of A/UX at the UniForum trade show in February and the entry of the Mac II into the workstation environment, the MUG has formed a new SIG known as Workstation Technology. With commitments from DEC, SUN and Apple, this SIG will explore such aspects of state-of-the-art technology as network connectivity, user-interface integration and standards, multi-vendor inter-operability, graphics and optical disk technology. In addition to disseminating information, the group will provide a forum for the discussion and solution of common problems such as multi-vendor networks, system administration and security in a networked environment. The initial interests of the group have focused around Mac-to-SUN and Mac-to-VAX connectivity issues. Preliminary organizational meetings began in late January and the SIG should begin regular meetings by April.

Macrocosm, published by MUG and distributed nationally, is the official organ of the MUG. Regular features include general announcements and news, reviews of new Mac software and hardware, a synopsis of previous months' SIG and General meetings, listing of public domain software, and a calendar of upcoming events. Don Crabb, Contributing Editor and Columnist for *InfoWorld*, has become a regular contributor to *Macrocosm*. MUG encourages its membership to submit original articles of general interest for publication.

MUG membership is free, and all that is asked of the member is participation and enthusiasm. Benefits of membership include:

- entry to monthly general meetings,

- participation in SIGs,

- access to the public domain software library,

- a subscription to *Macrocosm*,

- access to the "dire straits" Help Line, and

- access to the forthcoming BBS (Bulletin Board System).

The MUG can be contacted at 288-5199 or through correspondence to:

Macintosh Users Group
   5528 South Hyde Park Blvd.
   #1106
   Chicago, IL
   60637
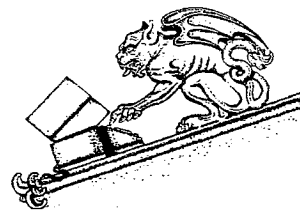
Micro Developer News & Resources

— Stuart Schmukler

AUC

The University of Chicago is a member of the Apple University Consortium (AUC), a group of thirty-three schools that are active in developing software for higher education. On this campus a number of projects have been undertaken in various departments. Reports of these projects are published in Apple's quarterly publication of activities on university campuses, *Wheels For The Mind* (*WFTM*). Subscription forms are available from Stuart Schmukler at 702-7630 or Bill Sterner at 702-7172. The cost is $12 per year.

Any groups on campus that have projects, articles, case studies, or "work-not-yet-in-progress" can submit the forms reproduced at the end of this article to Developer's Support, which will forward the information to the editors of *WFTM* for inclusion in their next issue. The forms are also available on-line in the public-domain areas on Sphinx as:

/usr/sun/mac/wftm.forms

and on the DEC-20 as:

DALE:< MICRO.MAC > wftm.forms

NCRIPTAL/EDUCOM Software Awards:

NCRIPTAL and EDUCOM have just announced that they are now looking for entries for their second annual NCRIPTAL/EDUCOM software awards. NCRIPTAL is the National Center for Research to Improve Postsecondary Teaching and Learning. EDUCOM is a non-profit consortium of over 450 colleges and universities concerned with the use and management of information technology in higher education. Any faculty member with stellar soft-

ware in a particular discipline, please submit an entry to:

> NCRIPTAL
> 2610 School of Education Building
> University of Michigan
> Ann Arbor, Michigan 48109-1259

Developer's Support at U of C:

On this campus, the University of Chicago Computation Center supports the development of Macintosh microcomputer software for instruction and research through the *University of Chicago Registered Developer* program.

Through this program, we can support your program development work with access to:

- Staff Technical Support — for development-specific problems such as bugs and undocumented features,
- Macintosh Software Supplements — the programming interfaces to Apple products,
- Macintosh Development Seminars — overviews of Macintosh development tools,
- Developer's Reference Library — software developed on campus and Apple technical documentation.

All that we require is that you:

- Are faculty, staff or a registered student at the University of Chicago, or are a staff member at Argonne National Laboratory or Fermi Lab,

- Provide a short project-statement,

- Agree to give at least a single run-only copy of the finished software to the Development Library,

- Join Apple Programmer's and Developer's Association (APDA) — the only way to get technical manuals from Apple.

For an additional application form or more information...

● call or send electronic mail to:
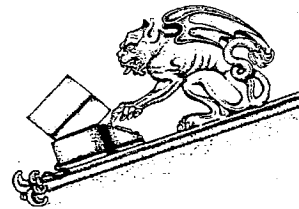
Stuart Schmukler   702-7630

       staff.sas@chip.uchicago.edu

or *Bill Sterner*   702-7172

       staff.bill@chip.uchicago.edu

● or send U.S. Mail to:

       Developer's Support
       The University of Chicago
       Computation Center
       1155 E. 60th Street
       Chicago, IL 60637-2745

Developers: To send a graphic, either send a disk or *binhex* the graphic and send it thru the e-mail system to *staff.sas*, with the article and the figure clearly marked, both in the document and the name.

Wheels for the Mind   Project Report Submission Form

Complete form and submit with all project reports:

Via E-mail, to: or Thru FAC EX or U.S. MAIL, to:

staff.sas@chip   *Stuart Schmukler / Developer's Support*
University of Chicago Computation Center
1155 E. 60th Street
Chicago, IL 60637-2745

[Please print. Form also available on disk as a MacWrite file, and on AppleLink in Higher Education Folder]

[ ] New Project
[ ] Updated Project (last appeared in _____issue of *Wheels for the Mind*)

Project Contact (for more information)

Name _____

Title/Dept. _____

Institution _____ Phone _____

Address _____

City _____ State _____ Zip _____

Title of Project _____

Curriculum/Discipline _____

Current Status _____

Description of Work [paragraph] _____

_____

_____

_____

_____

_____

Wheels for the Mind Article/Case-Study Submission Form

Complete form and submit with all articles, case studies, story outlines, graphic illustrations, and supporting information:

Via E-mail, to: or Thru FAC EX or U.S. MAIL, to:

                                                       Stuart Schmukler / Developer's Support
staff.sas@chip   *University of Chicago Computation Center*
                                                       1155 E. 60th Street
                                                       Chicago, IL 60637-2745

[Please print. Form also available on disk as a MacWrite file, and on AppleLink in Higher Education Folder]

Title/Story Subject _____

Curriculum/Discipline _____

Project Contact (for more information)

Name _____

Title/Dept. _____

Institution _____ Phone _____

Address _____

City _____ State _____ Zip _____

[Please answer the following questions, attach any supporting information & graphic illustrations, and send to the address above.]

1. How did your project get started and what are the expected/desired results?

2. What role has computing played in the learning process; how can your experiences benefit other schools?

3. How will Macintosh be used to help you reach your goals?

4. What software/courseware do you plan to use in your work/project? Be specific.

5. What hardware equipment are you using? Include number of systems, peripherals, networking.

Article/Story Outline
[Draft story outline or detailed case study that best describes and explains your work/project.]
[Use and attach a separate sheet of paper, if needed.]

Upcoming Micro Documentation

— Ellen Seebacher

The Winter 1988 issue of the Computation Center *Newsletter* announced the establishment of the Microcomputer Information Group — only one in a series of changes at the Computation Center. The Center now has a Microcomputer Store at 1155 E. 60th Street, a microcomputer documentation specialist, and expanded areas of support for microcomputer owners. A microcomputer Hotline will be available in the near future.

Some documentation on microcomputers has long been available through Doclist on the mainframes, but these memos are now limited and out-of-date. Even their numbering — mostly in the originally MVS-oriented '4000' series — speaks of an earlier era. A few of this older series of memos are currently being updated and renumbered, such as memo 4372 on the Demonstration & Development Lab. In response to requests from users, we are about to publish wholly-new memos in the microcomputer '6000' series:

Memo 6004   *External Microcomputer Services*

Memo 6005   *Microcomputing Classes Outside the Computation Center*

Memo 6006   *External Microcomputing Resources and Information*

You will be able to obtain these via the Doclist program on Chip, and by entering *pub doclist* in SuperWylbur. Watch the logon messages for an announcement.

<u>Other</u> <u>documentation</u> <u>currently</u> <u>in</u> <u>the</u> <u>works</u>:

In the near future will be releasing a brochure — available in memo form through Doclist — on Computation Center microcomputer services. We are also preparing a memo on downloading public domain software, both locally and via networks. See the article on public domain software in the PYRAMID/UNIX section of this *Newsletter*.

Speaking of newsletters...

You may have noticed a new addition to the campus micro scene. The first issue of the microcomputer newsletter, christened *Micros of the Midway*, was mailed to recent buyers of MDC computers, as well as to faculty and staff with responsibility for microcomputers. Copies were also made available at Usite, Regenstein and the Computation Center. The March 4 issue of the *Maroon* printed *Micros of the Midway* in its entirety, along with a subscription form.

In case you missed the premiere issue, it's not too late to subscribe. Just fill out and return the form on the other side of this page.

Subscription Information

for the Microcomputer Newsletter

Fold and Send This Form to:

Microcomputer Documentation Specialist
University of Chicago Computation Center
1155 East 60th Street
Chicago, IL   60637

Please enter my subscription to *Micros of the Midway*.

Name _____

Address _____
(Fac Ex addresses are preferred)

Address _____

DEPARTMENTS

People

People who have joined or
   transferred within the Center:

Joining the Library Computer Systems group are
Rosemary Lopiano as Junior Programmer/Analyst
I, and **Cheryl Malmborg** and **Janet Mather** as
Junior Programmer/Analyst II. In the Microcomputer
Distribution Center, **William Flachsbart**, Student
Program Advisor, has become a Microcomputer
Technical Sales Consultant, and **Samuel Black-
man**, **Andrew Brown**, **Brian Harney**, **Christopher
Kim**, **Gregory Lankford**, **Steven Meralevitz** and
Susan Mercer are Stock Clerks. **Min-Woong
Sohn** is a Computing Assistant. **Margret Steven-
son** covers the Computation Center's reception
desk during the lunch hours.

People who have left the Center:

Allen Douglas and **Steven Jones**, Stock Clerks in
the Microcomputer Distribution Center, and **Mi-
chael Heinz**, Programmer/Analyst in Administrative
Information Systems, have left the Center. **Myra
Squires**, Production Expeditor, has transferred to
the Financial Systems group in the Comptroller's
Office.

Documentation

New Documentation Available

  02/05/88 **6003** *Macintosh KERMIT*
        Memo 6003, "The Macintosh Ker-
        mit", has been extensively updated
        to reflect the new procedures ap-
        propriate for the latest versions
        (0.8(35) & 0.8(28)) available from
        the Center Business Office.

  02/03/88 **R153** *Using UNIX on the Pyramid*
        UofCUnix is a basic introduction to
        the UNIX system on the Pyramid
        90x at the University of Chicago.
        The manual has been totally re-
        vised and rewritten.

Recently Updated Documentation

  02/18/88 **2050** *MUSE*

  02/17/88 **4377** *Student Guide to IC Ac-
        counts*

  01/27/88 **R138A** *Kermit Protocol Manual*

  01/08/88 **R187A** *SuperWylbur v.37 HELP
        files*

New in the MVS Notice File

  02/23/88 **NETS2** *Bitnet problems with
        UWACDC*

  02/23/88 **XSET7** *New Box Commands
        Available*

  02/23/88 **XSET6** *Booklet Style Printing
        Available*

  02/03/88 **NEWS36** *On MVS - passwords
        MUST be at least 6 characters long*

  01/26/88 **NETS1** *NETINFO Macro is Avail-
        able*

12/30/87 **STAT10** *LISREL 6.13 installed*

12/15/87 **ACCT8** *DETAIL now allows job-name wildcards*

12/11/87 **COMM2** *Bitnet-Internet Gateway Changes*

12/09/87 **COMM1** *Old MVS mail to be removed*

12/04/87 **SWYL28** *Incorrect values in SHOW SPACE*

New in the DEC Notice File

10/12/87 **SVC5** *Advice Desk Information*

New in the PYRAMID Notice File

12/11/87 **apl/01** *Version 5 release 4 of APL*

12/11/87 **emacs/01** *Using emacs to reply from rn*

12/11/87 **emacs/02** *uucp mail path function*

12/11/87 **ethernet/01** *Binary file transfer from Chip*

12/11/87 **games/01** *News about games on sphinx*

12/11/87 **gemacs/01** *Printing the GNU Emacs Manual*

12/11/87 **general/01** *unix support codes*

12/11/87 **general/02** *Note on the "arcrest" command*

12/11/87 **general/03** *Lost and Found at Usite*

12/11/87 **general/04** *300 baud Telenet address*

12/11/87 **general/05** *Mail addresses for pyramid questions*

12/11/87 **general/06** *Login access time*

12/11/87 **general/07** *Cookbook programs installed*

12/11/87 **general/08** *PCA Regulations*

12/11/87 **general/09** *Photocopier at Usite*

12/11/87 **general/10** *Terminals for sale*

12/11/87 **icon/01** *icon version 6 available*

12/11/87 **icon/02** *List of users requested*

12/11/87 **mail/01** *Forwarding mail to MVS*

01/07/88 **mail/02** *mh and he available*

12/11/87 **micros/01** *xmodem available*

12/11/87 **networks/02** *Changes to /etc/hosts*

12/11/87 **networks/03** *seismo to be unplugged*

01/27/88 **networks/04** *Network information available in SuperWylbur*

12/11/87 **pascal/01** *pxref*

12/04/87 **services/01** *General Information Telephone Numbers*

12/04/87 **services/02** *Computer Communications Information*

12/04/87 **services/03** *Usite Hours:*

12/04/87 **services/04** *Usite Output Delivery Schedule*

12/04/87 **services/05** *Advice Desk*

12/04/87 **services/06** *Computation Center Custom Services*

12/04/87 **services/07** *Business Office*

12/04/87 **services/08** *Microcomputer Distribution Center*

12/04/87 **services/09** *Terminal & Micro-computer Maintenance*

12/04/87 **services/10** *Tape Library*

12/04/87 **services/11** *Data Entry*

12/04/87 **services/12** *Demonstration & Development Lab*

12/04/87 **services/13** *I/O Window*

12/04/87 **services/14** *Expediting Services*

03/20/85 **tapes/01** *Operating services no longer copies some tapes*

03/23/87 **tex/04** *cm and LaTeX fonts now available*

12/11/87 **tex/05** *Tex and Metafont available*

12/11/87 **tex/07** *Printing TEX on the Xerox 9790 laser printers*

01/28/86 **transcript/01** *TranScript available on sphinx*

12/11/87 **usenet/01** *netiquette command available*

12/11/87 **usenet/02** *vnews available*

12/11/87 **usenet/03** *Usenet documents*

12/11/87 **usenet/04** *List of news groups*

12/11/87 **usenet/05** *New news groups & rn*

12/11/87 **usenet/06** *local.test newsgroup*

12/11/87 **usenet/07** *Posting to moderated newsgroups*

12/11/87 **usenet/08** *newsgroups command*

12/11/87 **usenet/09** *Replying to articles with rn*

12/09/87 **utilities/01** *Faster grep utilities installed*

Index of Center Newsletters

The following index covers the thirteen issues of the *Computation Center Newsletter* from the February 1985 issue through the Winter 1988 issue. Within this period, the *Newsletter* changed from a monthly to a quarterly publication. As a result, "Feb'85" refers to February 1985, while all of the other abbreviations refer to seasons: "W" - Winter, "F" - Fall, "Su" - Summer, "Sp" - Spring.

Hard-copies of these *Newsletters* should be available soon through a public macro on SuperWylbur. Watch the logon messages for an announcement.

Explanation of Statistics

Performance statistics for the Computation Center computers are provided each month. Data on computer utilization and the most-executed programs are presented separately for the Amdahl 5860 and the DEC-20, Chip.

MVS Utilization: This table presents batch turn-around times for various classes of jobs, total hours of CPU time used, and total number of batch jobs and steps. Information about the number and duration of SuperWylbur and TSO sessions is also provided. Statistics for the past three months are presented.

Top Twenty MVS Programs: This table describes the twenty most executed programs summed across the past three months. The count of program executions and the percent of program executions over all steps is also shown.

DECsystem-2060 Utilization: The total hours for CPU and connect time are shown in this table, separately for each accounting period. Once again, the data are presented for the past three months.

Top Twenty DEC Programs: Every ten minutes over the entire month, the DEC-20 records what programs are being executed. This table presents those counts. For example, a count of 4725 for MM indicates that MM occurred 4725 times during the past three months in the one-per-ten-minute samples. The percent column shows the count for the program over the total occurrence for all programs.

MVS Utilization November 1987 - January 1988

Service Provided	Amdahl 5860/MVS November 1987	Amdahl 5860/MVS December 1987	Amdahl 5860/MVS January 1988
Batch turn-around *	85th Percentile Job	85th Percentile Job	85th Percentile Job
all jobs non-setup jobs tape setup jobs	2:57 1:31 25:44	2:30 1:25 20:31	3:10 2:21 16:49
Total CPU-hours used	243 hrs 30 min	215 hrs 30 min	227 hrs 54 min
SuperWylbur sessions CPU hours connect hours average session average CPU/session	15,310 9 hrs 14 min 11,519 hrs 45 min 2.17 sec	13,703 8 hrs 8 min 10,451 hrs 46 min 2.14 sec	15,049 8 hrs 32 min 11,039 hrs 44 min 2.04 sec
TSO sessions CPU hours connect hours average session average CPU/session	4,937 10 hrs 6 min 2,324 hrs 28 min 7.36 sec	5,067 8 hrs 16 min 2,539 hrs 30 min 5.87 sec	6,379 9 hrs 43 min 3,020 hrs 28 min 5.48 sec
Jobs submitted Steps executed	48,001 96,663	47,551 97,421	47,314 96,233

* Time (minutes:seconds) from job submission until job completion, from 10:00 a.m. until 5:00 p.m., Monday through Friday at normal priority (85% of the jobs are completed at or under the time shown).

The reported connect-time does not include Model 204 or CICS connections.

Top Twenty MVS Programs November 1987 - January 1988

Program	Description	Percent	Count
UCFLBL20	Filebol	7.89	25,852
SASLPA	SAS	6.82	22,354
IEBGENER	IBM file handling utility	6.65	21,788
WYLLIST	SuperWylbur list offline	5.64	18,497
SORT	SyncSort	4.91	16,099
IDCAMS	VSAM utility for catalog operations	3.62	11,851
IEFBR14	IBM utility - null step	3.17	10,381
SUCCESS	Operating Services utility	3.14	10,301
FAIL	Operating Services utility	3.12	10,214
IEWL	Linkage editor	2.86	9,373
IBMDEC	IBM/DEC link utility	2.73	8,956
BATCH204	Model 204 run in batch	2.51	8,224
MARKYBOL	Systems utility	2.36	7,727
MAILXBM	Bitnet mail through SuperWylbur	2.31	7,568
SPSSX	SPSS Version X	2.17	7,116
IKFCBLOO	VS Cobol version 2.4	1.26	4,133
PGM = *.DD	User defined routines	1.15	3,772
MVGDG	Multi-volume tape GDG cycler	1.02	3,332
COMPUSET	Xerox text composing program	0.93	3,060
XRXINT	Xerox print formatter	0.85	2,772

CHIP - DECsystem-2060 Utilization Nov. 1987 - Jan. 1988

Account Period	November 1987		December 1987		January 1988	
	CPU Hours	Connect Hours	CPU Hours	Connect Hours	CPU Hours	Connect Hours
DAY	87.3	5054	83.2	4673	81.3	4945
EVENING	31.8	807	28.8	611	17.3	776
OVERNIGHT	87.9	939	95.9	1007	92.8	867
TOTAL	207	6800	207.9	6291	191.4	6588

Top Twenty Chip Programs November 1987 - January 1988

Program	Description	Percent	Count
MM	Electronic Mail Manager	10.63	26,152
OPR	Operator functions	9.48	23,310
PTYCON	Pseudo-terminal controller	4.90	12,055
WATCH	Generates these statistics	4.87	11,975
NETSRV	Supports ethernet network functions	4.87	11,971
MMAILR	Network mail daemon	4.86	11,965
SYSJOB	System job controller	4.86	11,965
RWHOD	Lists users on ethernet hosts	4.86	11,965
IBMSPL	MVS link daemon	4.86	11,953
USAGE	Utility to collect program use data	4.85	11,919
SYSDPY	Operator interface with job queues	4.72	11,616
BITNET	Off-campus electronic mail network	4.57	11,243
WINDOW	Full screen PTYCON	4.51	11,087
EXEC	TOPS-20 command processor	4.29	10,549
1022	Database system	3.73	9,172
MINITA	Interactive statistical program	2.86	7,024
BATCON	Batch Controller	2.25	5,542
DEMAND	Data management system	2.02	4,974
MUSE	Full screen editor	1.84	4,529
EMACS	Full screen editor	1.31	3,234

General Information

Computation Center Administration

Acting Director of the Computation Center	John E. Iannantuoni	702-7616
Associate Director Operations and Technical Services	John E. Iannantuoni	702-7616
Assistant Directors Instruction and Research Information Services	Harold C. Bloom	702-7155
Information Technologies and New Services	George R. Bateman	702-7174
Finance and Administration	Peter B. Hayward	702-8671
Administrative Information Services	David E. Trevvett	702-6018

Computation Center Buildings

Main Building	1155 E. 60th St.	702-7151
Microcomputer Distribution Center	1307 E. 60th St., Rear Entrance	702-6086
Multi-media Classroom	Harper 406	702-7153
Usite Terminal Cluster	Wieboldt 310	702-7894

Computer Communications Information

Phones	300 baud	1200 baud	2400 baud	4800 baud	9600 baud
Modem calls, on campus	5-8880	5-8890	--------	--------	--------
Modem calls, off campus	753-0980	753-0945	753-0975	--------	--------
IBX-DOB calls	5-3600	5-3600	5-3600	5-3600	5-3600

Class codes	300 baud	1200 baud	2400 baud	4800 baud	9600 baud	telenet
Amdahl 5860/MVS	mvs3/vtam	mvs12/vtam	mvs24/vtam	mvs48/vtam	vtam	mvstn
DEC-2060/TOPS-20	chip	chip	chip	chip	chip	chiptn
Pyramid 90x/Unix	unix	unix	unix	unix	unix	-------

Bitnet mailing addresses

Computer	General address form	Example
Amdahl 5860 (MVS)	*logon-id*@uchimvs1	xashalb@uchimvs1
DEC-2060 (Chip)	*username*@chip.uchicago.edu	staff.hal@chip.uchicago.edu
Pyramid 90x (Sphinx)	*person-id*@sphinx.uchicago.edu	halb@sphinx.uchicago.edu

Telenet dial-in information

	Nearest phone number	Network address
	800-336-0437 most states	312436 (300 baud)
	800-572-0408 Virginia	31236 (1200 baud)
		312437 (2400 baud — DEC only)

Quick Reference Phone Directory

Information
General 702-7151
Machine status 702-7626

Accounts
Billing information & records 702-7158
Opening class accounts 702-7159
Opening PCA and regular accounts ... 702-7158
Refunds 702-7624

Advice and help
Applications software 702-7624
   Reporting problems
   Suggestions & complaints
Office support systems 702-7174
   Microcomputers
   Terminals
   Word processors

Computer supplies & tapes 702-7159

Custom services
Microcomputer custom services 702-7453
Printing 702-6081
Programming 702-7166

Data entry services 702-7604

Dataset recovery
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